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WORLD MARITIME UNIVERSITY
MALMÖ, SWEDEN

A COMPARATIVE STUDY OF MARINE ACCIDENT
INVESTIGATION PROCEDURES AND A PROPOSAL FOR GHANA

by

Simon Kpe

Ghana

A paper submitted to the Faculty of the World Maritime University
in partial satisfaction of the requirements for the award of a

MASTER OF SCIENCE DEGREE
in
MARITIME EDUCATION AND TRAINING (NAUTICAL).

The contents of this paper reflect my personal views and are not
necessarily endorsed by the UNIVERSITY.

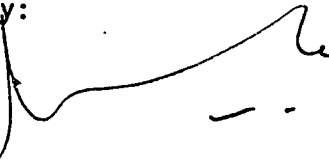
Signature:




Date: 20 September, 1989

Supervised and assessed by:

Stephen J. Cross
Lecturer
World Maritime University



Co-assessed by:



Captain Luigi A. Colucciello
Chief, Marine Safety Division
National Transportation Safety Board
Visiting Professor World Maritime University

TO THE MEMORY OF VICENCIA, MY MOTHER-IN-LAW, WHO MADE THE
ULTIMATE SACRIFICE FOR ELIZABETH, MY DAUGHTER, DURING MY
FIRST YEAR AT WMU.

"O GIVE THANKS UNTO THE LORD, FOR HE IS GOOD: FOR HIS
MERCY ENDURETH FOR EVER. THEY THAT GO DOWN TO THE SEA IN
SHIPS, THAT DO BUSINESS IN GREAT WATERS; THESE SEE THE
WORKS OF THE LORD, AND HIS WONDERS IN THE DEEP. FOR HE
COMMANDETH, AND RAISETH THE STORMY WIND, WHICH LIFTETH UP
THE WAVES THEREOF. THEY MOUNT UP TO THE HEAVEN, THEY GO
DOWN AGAIN TO THE DEPTHS; THEIR SOUL IS MELTED BECAUSE OF
TROUBLE. THEY REEL TO AND FRO, AND STAGGER LIKE A DRUNKEN
MAN, AND ARE AT THEIR WITS' END. THEN THEY CRY UNTO THE
LORD IN THEIR TROUBLE, AND HE BRINGETH THEM OUT OF THEIR
DISTRESSES"

PSALM 107:1, 23-28. KJV.

ACKNOWLEDGEMENTS

For the successful completion of this thesis, I am indebted in various degrees to a large number of people, whose names and roles I cannot list here completely.

I, however, have to mention that for agreeing, in his official capacity, to nominate me to do the course and to provide some material for this work, I am grateful to Mr. W. Ansa-Otoo, Shipping Commissioner, Ministry of Transport and Communications, Accra. My profound gratitude goes to Capt. A.R.N. Macauley, Project Director, RMA, Accra; to Ambassador B. Zagorin, Senior Adviser to the Chancellor, and to Secretary General C.P. Srivastava, both of IMO, London. Without the generous intervention of these fine gentlemen, my search for sponsorship would have foundered.

For general guidance during the course, search for a topic and suitable material, and for tactful professorial goading that has led to this result, I extend my heartfelt thanks to Prof. Gunther Zade, my course Professor. The assistance of my assessor, the indefatigable Capt. S.J. Cross, in advising me, finding and translating suitable material from Dutch into English for my use, and painstakingly going through various sections of the work at all times, is hereby acknowledged.

If this thesis has any appreciable quality, it owes a great deal to a number of visiting Professors, who kindly looked it over generally, dwelt particularly on those parts dealing with the procedure in their respective areas of authority, and then suggested improvements. Among these are:

- Dr. Frank L. Wiswall, Jr., Bureau of (Liberian) Maritime Affairs, Reston, Virginia.
- Prof. Jens Froese, SUSAN, Fachhochschule Hamburg.
- Prof. L. Colucciello, Chief, Marine Casualty Investigation Division, NTSB, Washington, D. C.
- Capt. A.N. Cockroft, Marine Consultant, City of London Polytechnic.

For the kind, prompt and generous supply of requested material on their procedures, my sincere gratitude goes to:

- Capt. W.A. Chadwick, Chief, Investigations Division and Capt. R.H. Benner, Chief, Safety Evaluation Division, both of the Liberian Bureau of Maritime Affairs;
- Prof. Edgar Gold (a former Black Star Line Captain) now Director, Ocean Studies Programme, Dalhousie University, Halifax, Nova Scotia, and Mr. D.D. Thorne, Chief, Marine Casualty Investigations, Ottawa, Canada.

Other resident faculty members provided invaluable help in the choice of topic, provision of relevant material and pertinent advice. I must here thank Prof. P.S. Vanchiswar, Prof. A.D. Couper and his successor, Prof. P. Alderton; also Mr. P. Eriksson of the Swedish Maritime Administration, and Lecturer B.S. Russell of the USCG.

I extend my special appreciation and deep gratitude to Prof. L. Colucciello, who, in spite of his busy schedule, kindly agreed to co-assess this paper. During his week at WMU here as a Visiting Professor, and also at home in Washington, D.C., he checked, corrected, advised and commented on this work.

Particular gratitude goes also to many of my colleagues who supported me with suggestions and ideas when my own fountain suddenly appeared to have run dry. In this regard, I must mention Capt. D.W.S. Gbesemete, MSA-N 88, and George Darkey, MET-N 89, for their help in my choice of topic; also Victor Loustaunau-Astorga, MSA-N 89, Simeon A. Yearwood, GMA-1 89 and practically all my mates of MET-N 89, including L.O.F. (Larry "the Chief") Bereiweriso, our pleasant but indomitable course representative.

Furthermore, I acknowledge, with fond appreciation, the patience of my dear wife, Bertha, who, having endured some twenty six years of my seafaring, has managed to creditably handle these last two years of my almost continuous absence with admirable aplomb and finesse despite the numerous difficult problems encountered, especially with a brood of our young ones to bring up.

Finally and above all, I thank the Almighty God, our heavenly Father, who has made all these things possible.

ABBREVIATIONS

CFR	CODE OF FEDERAL REGULATIONS
C.G./USCG.	UNITED STATES COAST GUARD
COLREG	CONVENTION ON THE INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA, 1972
I.I.B.	INDEPENDENT INVESTIGATION BOARD
IMO	INTERNATIONAL MARITIME ORGANIZATION
I.O.	INVESTIGATING OFFICER
ITOPF	INTERNATIONAL TANKER OPERATORS PROTECTION FUND
MARPOL	INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973/78
MOU	MEMORANDUM OF UNDERSTANDING
MSC	MARITIME SAFETY COUNCIL
NTSB	NATIONAL TRANSPORTATION SAFETY BOARD
OBO	OIL BULK ORE
OCMI	OFFICER IN CHARGE, MARINE INSPECTION
OSC	OUTER CONTINENTAL SHELF

OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
SOLAS	INTERNATIONAL CONVENTION FOR SAFETY OF LIFE AT SEA, 1974
STCW	INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978
TSPF	TANKER SAFETY AND POLLUTION PREVENTION
U.K.	UNITED KINGDOM
U.S./U.S.A.	UNITED STATES OF AMERICA
VLCC	VERY LARGE CRUDE CARRIER

INTRODUCTION

During the past three decades, a number of serious maritime accidents have occurred in Ghana. These include:

- a grounding off Accra in the 50's resulting in total loss;
- a grounding off Takoradi in the 60's resulting in total loss;
- a major cotton fire on the Ghanaian general cargo vessel the m.v. "Oti River", 10,000 dwt, on 5 June, 1977 while discharging at Tema, resulting in severe damage to cargo;
- the capsizing at sea in Ghanaian territorial waters on 27 June, 1983 of the coaster, m.v. "Bazamri" resulting in loss of life and property;
- the capsizing of the m.v. "Amma Dela", a 38 foot fishing vessel of Somen Fisheries, Ghana, in the Tema fishing harbour on 17 August 1985, resulting in the loss of many lives and damage to property;
- the grounding off Tema main harbour entrance of the m.v. "Keta Lagoon", a 16,600 dwt multi-purpose vessel of the Black Star Line, Ghana on 21 October, 1986, resulting in severe structural damage;
- a number of small fishing boat and canoe accidents.

It is the aim of this paper to make a comprehensive study of how these accidents, particularly the groundings and capsizings, were investigated with a view to comparing the procedure to what obtains in other maritime countries, particularly the more traditional ones. This is to enable the suggestion of useful improvements to the existing approach in Ghana, with most emphasis on safety investigation, some on the disciplinary or law enforcement aspects, and a mention of the criminal and civil litigation viewpoints.

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CHAPTER ONE

1.1 DEFINITION OF CASUALTY.

As provided for in the United Kingdom Merchant Shipping Act, 1970,* (12) and broadly the same as in many other maritime countries, a casualty is deemed to have occurred under one or more of the following circumstances:

- .1 the loss or presumed loss, stranding, abandonment of, or damage to, a ship;
- .2 the loss of life (or a serious personal injury) caused by fire on board or by an accident to or on board a ship or a ship's boat;
- .3 any damage caused by a ship;
- .4 the loss of packaged dangerous goods;
- .5 refusal to render assistance to the distressed;
- .6 damage to the environment.

Items .4 and .5 refer mainly to the U.K., West Germany, and Liberia.

*Copy of a new, slightly different, Statutory Instrument on Merchant Shipping (Accident Investigation) Regulations 1989, which came out after submission of this work for assessment, is attached in Appendix 1.

1.2 TYPES OF CASUALTY INVESTIGATION

Casualty Investigation can be divided into the following general groups:

- .1 Safety investigation, conducted by the Maritime Safety Administration;
- .2 Disciplinary investigation also conducted by the Safety Administration but often by an inspector other than the safety investigator;
- .3 Criminal investigation carried out by the Ministry of Justice to punish criminal acts;
- .4 Civil liability investigation by aggrieved individuals, usually represented by lawyers, aimed at settling claims of liability.

This work is mainly concerned with safety and disciplinary investigation.

1.3 PURPOSE OF CASUALTY SAFETY INVESTIGATION.

The main purpose of casualty safety investigation is the ascertainment of the cause or causes and circumstances of an accident in order that important lessons may be learned and put into practice to avoid similar mishaps in the future. As Max Heindel put it, "sorrow and pain are our most benevolent teachers". (10) We would miss the opportunity and cheat ourselves if we did not analyse an accident in order to learn the lessons offered. The prudent must learn from the actions of others by putting himself in their shoes, analysing the occurrence and

applying the lesson learned. He thus benefits from the experience. A.F. Harrold, in a paper presented on "The Investigation of Marine Casualties" to the Institute of Marine Engineers agrees that "without question, bad experience is salutary and provides the richest source of learning". (9). It thus obviates repeating the mistakes of others. The purpose is achieved by conducting the investigation in as fair a manner as possible, without infringing on the legal rights of the witnesses, and bringing out a useful report in good time to enable a profitable use of the lessons offered by the accident.

1.4 Furthermore, casualty safety investigation is aimed at restoring public confidence in shipping as a reasonably safe and inexpensive means of transport, particularly where carriage of large quantities of goods over long distances are concerned, more especially so nowadays considering the hazards of transportation of dangerous goods.

1.5 It is also to enable suggestions to be made for the correction of any wrong procedures that may be uncovered. Its findings are extremely useful in the provision of factual information on the circumstances of the accident. Some countries (the U.K., U.S., Liberia, etc.) often give out relevant statements of facts to litigants when requested. These may be used in deciding matters of far reaching importance including damage claims on cargo, other property, personal injury, loss of life, etc. The quality of a safety investigation is often indicated by its effectiveness in such circumstances. Litigants however have to conduct their own investigations for evidence acceptable in a Civil Liability Court.

1.6 A necessary but often unpleasant follow up is to discipline negligence or wrongdoing whether on the part of the master, officers, owners, builders, repairers or anyone found culpable. This deters erroneous action and encourages serious application of safe procedures. Some authorities, e.g. the U.S. Coast Guard, hold a separate disciplinary hearing for this purpose.

1.7 INTERNATIONAL OBLIGATIONS.

The Maritime Administrations of all member countries of the International Maritime Organization, (IMO), parties to its Conventions are enjoined to investigate casualties and to provide the Organization with information on having done so. Those party to the International Convention for Safety of Life at Sea, (SOLAS 1974), for example are obliged, as clearly stated in Regulation 21 of Chapter I to conduct an investigation of any casualty occurring to any of their ships subject to the provisions of the said convention when they judge that such an investigation may assist in determining what changes in the current regulations might be desirable. (6A)

1.8 The Administration of a member state party to the International Convention for the Prevention of Pollution from Ships, (MARPOL 73/78), undertakes, under Article 12, to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the Regulations if such casualty has produced a major "deleterious effect" upon the marine environment. (7A)

1.9 Each party to the Convention also undertakes to supply IMO with information concerning the findings of such investigations, when it judges that such information may assist in determining what changes in the current Convention might be desirable.

1.10 The Maritime Administration of each member state party to the International Convention on Load Lines, 1966, (LL66), undertakes to conduct an investigation of any casualty occurring to ships for which it is responsible and which are subject to the provisions of the said Convention when it judges that such an investigation may assist in determining what changes in the Convention might be desirable. (8A)

1.11 Each contracting Government also undertakes to supply IMO with pertinent information concerning the findings of such investigation. "No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the ships concerned or in any manner fix or imply responsibility upon any ship or person", the Convention adds.

1.12 Under the United Nations Law of the Sea, 1982, Article 94(7), each Flag State, in exercising effective jurisdiction and control in administrative, technical and social matters "shall cause an inquiry to be held by or before a suitably qualified person or persons into every marine casualty or accident of navigation on the high seas involving a ship flying its flag and causing loss of life or serious injury to nationals of another State or serious damage to ships or installations of another State or to the marine environment. The flag State and the other State

shall co-operate in the conduct of any inquiry into any such marine casualty or accident of navigation". (13)

1.13 IMO GUIDELINES

A number of IMO Assembly Resolutions, notably A173,ES(IV), A440, A147, and MSC Circular 433, urge and request Administrations to:-

- .1 ensure availability of suitable and efficient means and adequately qualified personnel to investigate casualties;
- .2 investigate casualties particularly those involving vessels of 1600 GRT or more or in the case of loss of life;
- .3 ensure that states affected by a casualty have the chance to participate in the investigation;
- .4 hold the inquiry in public if and when appropriate.

1.14 Other requirements urge submission to IMO of casualty investigation reports and any lessons learned. This is to enable a proper compliance with the Conventions and Regulations and in particular to provide information to IMO on the findings of inquiries.

1.15 In fact, Assembly Resolution A322 (IX) specifically encourages the MSC to consider taking the first steps in requesting information on inquiries into serious casualties from the Administration concerned and then take

any appropriate action to achieve the aim. A147 applies even to Governments not parties to the MARPOL Convention.

1.16 The following forms are to be used for reporting casualty investigations to the IMO whenever appropriate:

- .1 Intact Stability Casualty Record (MSC/Circular 224);
- .2 Fire Casualty Record (MSC/Circular 388);
- .3 Questionnaire on Maritime Distress Systems (COM/Circular 70).

1.17 EXAMPLES OF LESSONS LEARNED. (7)

The following are some of the beneficial outcomes of the lessons learned after some disastrous maritime accidents:-

- .1 After the sinking of the ss "Titanic" in 1912 with a huge loss of life and property, 13 nations adopted in 1914 an International Convention for the Safety of Life at Sea covering such areas as Safe Construction, Use of Radio in Distress, Ice Patrol etc. The outbreak of World War I however prevented it from coming into force.
- .2 The International Ice Patrol put into effect soon thereafter still exists today. Using ships, planes and, today, satellites, it observes sea ice and icebergs especially in the shipping lanes off Newfoundland during the iceberg season between March and July. It warns mariners twice daily by radio of the presence and location of

icebergs dangerous to navigation. It also assists vessels in distress and investigates the behaviour of sea-ice and ice-bbergs, such as the rate of melting with reference to ocean currents.

- .3 In 1929, eighteen countries attended a re-convened conference and adopted a Convention providing minimum standards on subdivision, (for structural fire fighting purposes), boatage and Life Saving Appliances for passenger vessels. It also required the use of radio and adopted some regulations for the prevention of collisions at sea.
- .4 In 1948, thirty countries met and made improvements to the 1929 Convention with respect to stability in damaged condition, structural fire protection, grain and dangerous cargo regulations.
- .5 Following the disastrous collision between the "Andrea Doria" and the "Stockholm" in 1956, fifty five states met in 1960 and strengthened many existing safety requirements, introduced several important new ones in, among other areas, stability, fire fighting, carriage of grain, life saving appliances and nuclear ships.
- .6 In 1966, the IMO Assembly approved major changes to Chapter II-2 of SOLAS covering Construction - Fire Protection, Fire Detection and Extinguishing. This followed several years of serious work by the Sub-committee on Fire Protection and that of the Maritime Safety

Committee, (MSC). All of the above was in response to the devastating fires on a number of well known passenger ships - the "Lakonia", "Yarmouth Castle", "Viking Princess", and the "Hanseatic".

1.18 Other recommendations were adopted in 1971 and reviewed in 1973 after further research including extensive work initiated by the International Chamber of Shipping in the wake of a number of destructive explosions in several VLCC's.

1.18.1 Capt. W.A. Chadwick, Chief, Investigation Division, Bureau of Marine Affairs, Republic of Liberia, in a paper submitted to a joint meeting of the Nautical Institute and the Institute of Marine Engineers on 3rd October, 1983, showed how analysis of the investigations into a number of major casualties to Liberian tankers in 1979/80 revealed that the explosions and fires in the cargo tanks usually followed the same pattern:

- .1 ballast voyage;
- .2 tank cleaning in progress;
- .3 tank atmosphere in flammable range;
- .4 cargo tanks not inerted;
- .5 ignition.

(See Annex 1). A properly installed and operated Inert Gas System was thus shown to be an effective cure for cargo tank explosions.(3)

1.19 In 1962, IMO, in updating the inherited 1954 Convention which attempted to reduce the observed pollution of the oceans by oil from ship's routine operations like cargo tank cleaning, machinery space bilge discharge, etc., adopted a number of amendments.

1.20 In 1967, following the grounding of the VLCC "Torrey Canyon" in the Scilly Isles, spilling over 120,000 tons of oil into the sea and heavily polluting the SW coasts of the British Isles, several new treaties were adopted, including the International Convention for the Prevention of Pollution from Ships, 1973. This Convention together with its Protocol of 1978, referred to later on, covers not only oil, but also chemicals, garbage, sewage and other harmful substances.

1.21 In the winter of 1976 and early 77, there was a series of maritime accidents off the United States coast. One of the most notable was the December accident to the "Argo Merchant" which resulted in such a severe oil pollution of the Nantucket Shoals area off Massachusetts, that the spill was then reported to be the largest "in North American history". (12A) This pollution has been exceeded by that caused by the grounding of the "Exxon Valdez" on 24 March 1989 in Prince William Sound, Alaska, where some eleven million gallons of crude oil was spilled.

1.22 Following a general public outcry for action to improve safety and enhance measures against pollution by ships, the Tanker Safety and Pollution Prevention (TSPP) conference was convened at the request of the U.S. President and others in

February 1978. Of the 13 serious tanker casualties occurring in the series, 8 were in or around the U.S.A. (6). Sixty five countries and sixteen International Organizations were represented. Important Protocols to SOLAS 74 and MARPOL 73/78 Conventions were adopted, particularly on such systems as:-

- .1 Radar
- .2 Steering Gear
- .3 Inert Gas
- .4 Surveys
- .5 VHF Radio Telephone

1.23 The "Torrey Canyon" disaster of 1967 was also followed by several Conventions resulting from the work of the IMO Legal Committee, (13) such as:-

- .1 The Intervention Convention, 1969 and its 1973 Protocol;
- .2 The Civil Liability and Compensation Convention, 1967/71 and its Protocol of 1984 for Oil Pollution Damage;
- .3 Limitation of Liability, 1976 for Maritime Claims.

1.24 The "Amoco Cadiz", laden with crude oil, grounded off the Brittany coast of France in March 1978 as a result of steering gear failure. Following the inevitable loud

public outcry caused by the severe pollution, new regulations covering steering gear were promulgated. A necessary protocol was also added to the Civil Liability and also the Compensation Conventions. (13)

1.25 The Formal Investigation conducted into the tragic capsizing of the "Herald of Free Enterprise" on 6th March 1987 just outside the port of Zeebrugge, Belgium, causing serious loss of life and property, resulted in a number of useful additions made to the SOLAS Convention at the suggestion of the United Kingdom, the flag state.

1.26 The following are some of the relevant improvements to the Convention:-

- .1 In April 1988, the first group of amendments were adopted. These affected a number of Regulations on Subdivision, Stability, Machinery and Electrical Installations.
- .2 The second group of amendments, tabled later, with specific reference to Ro-Ro vessels, required, inter alia, that:-
 - .2.1 the master be provided with information to enable him to ensure sufficient intact stability;
 - .2.2 the master be given information indicating maximum permissible KG or minimum permissible GM for all the service conditions.

.3 Other requirements affect:

.3.1 draught gauge systems;

.3.2 methods of calculating trim and stability
e.g. using computers;

.3.3 closing of all cargo loading doors before
sailing; - - -

.3.4 light weight surveys and re-inclining of
Ro-Ro ships with structural changes to the
superstructure.

1.27 STATISTICAL EVIDENCE.

The statistical evidence that some 75% of maritime accidents are caused by human error precipitated the adoption of the Convention of Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978, which entered into force in April 1984. This was to establish, for the first time, minimum crew training standards acceptable internationally.

1.28 Mr. C.P. Srivastava, Secretary General of IMO, citing statistical sources, (15) has cautiously pointed out the improvement in safety at sea, particularly indicated very clearly in the study of collisions in areas of IMO recommended traffic separation schemes since the 1960's. In the COLREG Rules of 1972, the use of these schemes was made mandatory.

1.29 For instance in the Dover Straits, one of the most congested seaways in the world and where use of the scheme

was started in 1967, collisions were reduced from 62 in 1961-66 (52 of them involving vessels proceeding in opposite directions) to 11 in 1976-81 with 4 involving meeting ships.

1.30 His paper further pointed out the statistical evidence of the vast increase in similar collisions in corresponding areas which did not have any separation schemes; for example along the coasts of Japan and Korea, it had risen from 5 in 1956-60 to 125 in 1976-80. Naturally, the rapid increase of international seaborne trade in the region over the period must also have played a part.

1.31 The benefits of Port State Control, the inspection of ships by officials of the port of call in accordance with the requirements of international conventions, resolutions and codes in removing sub-standard ships and poorly trained seafarers and operators from the scene, were also pointed out by Mr. Srivastava.

1.32 As a result of the lessons learned from the observed pollution caused by ships' operational procedures and accidents, international measures such as the implementation of MARPOL 73/78, were taken. It can be safely said that these measures have contributed enormously to the reduction of the pollution of the world's oceans by marine transport. According to the U.S. Academy of Sciences, this reduction is from about 2 million tons in 1971 to about 1.47 million tons in 1980 despite the large increase in the world tanker fleet from 170 million deadweight tons to 324 million.

1.33 The International Tanker Owners' Pollution Federation (ITOPF) also cited by Mr. Srivastava, (15) reported in 1986 that oil spillage into the seas from tankers had dropped by some 70% since 1980. It fell from approximately 26 spills (of over 500 barrels) a year reported in 1974-79 to about 8 a year in 1980-85.

1.34 Thus the benefits of Casualty Investigation, careful analysis of the results, publicizing the lessons learned and ensuring their application to the highest practicable extent, are clearly undeniable.

CHAPTER TWO

2.1 TYPES OF CASUALTIES

A casualty is a unique occurrence; the circumstances surrounding one cannot be exactly the same as those around another. Casualties can however be broadly grouped into general categories such as the following:

- Collision;
- Grounding;
- Foundering;
- Fire or Explosion;
- Chemical or Oil Spills;
- Cargo Damage.

2.1.1 When two vessels collide or when one runs into the other or into an installation, the circumstances and conditions require careful investigation since, especially with collisions at sea, the fault is rarely from only one party. Wrong procedures and other contributory factors may be identified and corrected.

2.1.2 When a vessel runs aground, damaging herself, her cargo and possibly polluting the environment, the contributing factors must be sought. Was it due for

example, to faulty navigation, poorly defined danger, equipment malfunction, etc.? The answers to such vital questions will contribute to decide the appropriate corrective action.

2.1.3 Investigation of the circumstances leading to a foundering, sometimes even in the case of a vessel sinking without survivors, can yield useful information, e.g. confirmation of the fact, approximate position, likely causes, etc. The case of the "Munchen", a six year old West German (LASH) barge carrier of 37,134 GRT which sunk in the North Atlantic with the loss of all hands in a severe storm on or about 12 December, 1978 while on a voyage from Rotterdam to New Orleans with a cargo of steel products, is a typical example.

The loss of the "Derbyshire", (9) a four year old 164,000 dwt OBO (Ore Bulk Oil) vessel of United Kingdom registry, with all 44 hands off Japan in 1980 is another example. The need for a formal investigation was not appreciated by the authorities concerned until a sister ship, the "Kowloon Bridge" was lost under apparently quite different conditions off SW Ireland.

2.1.4 Explosion and or Fire, two of the most dreaded dangers at sea, merit thorough investigation, not only for the settlement of the subsequent claims, but particularly for the lessons available in the calamity. The SOLAS requirement to provide inert gas systems on tankers following the disastrous explosions within one month on the VLCCs "Mactra", "Marpessa", and the "Kong Haakon VII" (17) clearly shows the value of this type of investigation.

2.1.5 Chemical or Oil Spills from tankers especially, but also bunker fuel spills from general cargo ships, result in pollution of beaches, facilities and other property. For the purposes of carefully scrutinizing operational procedures, machinery for any flaws to enable corrections to be made, and also for the negligent, if any, to be disciplined, the factors leading to the event must be investigated.

2.1.6 Cargo damage especially as a result of an accident to a vessel, needs to be looked into for any lesson on the improvement of packaging, stowage, securing, or even the suitability for sea transport, of a given item of cargo.

2.2 TYPES OF SAFETY INVESTIGATIONS

Broadly speaking, there are two types of safety investigations, namely:

- Preliminary Inquiry
- Formal (Judicial) Investigation

2.2.1 PRELIMINARY INQUIRY (P.I.)

A Preliminary Inquiry is a fact finding procedure in which one or more designated officers of the Maritime Safety Administration proceed to the scene of, or gather factual material about, a reported casualty for the purpose of:

- .1 ascertaining the facts leading to the accident;

- .2 obtaining the relevant information concerning all involved parties;
- .3 finding out as accurately as possible, the conditions which led to the accident;
- .4 being able to recommend to the MSA what course of action is best followed, whether to proceed to:
 - a formal investigation;
 - conduct disciplinary hearings or;
 - dismiss the case as not requiring any further action and file the record.

2.2.2 In this regard, the responsibilities of the officer conducting a Preliminary Inquiry are broadly as follows:

- .1 to board and inspect any ship involved in an accident within the jurisdiction of the State; this should be done without detaining or delaying the vessel unless absolutely necessary;
- .2 to summon witnesses and request answers;
- .3 to request and enforce the submission of all books, records, papers, documents, and any other evidence he considers necessary for the purpose;
- .4 to require the witnesses to make and subscribe a declaration of the truth of the statements to be made by them. Alternatively the investigator may

administer an oath;

- .5 to submit the proceedings and report of the Inquiry to the government;
- .6 if he considers a Formal Investigation necessary, his terms of reference permitting, then to make the necessary application to the appropriate authority under the Merchant Shipping Act;
- .7 to collect all available evidence including taking photos. He must not limit himself exclusively to obvious evidence suggesting a particular solution. Small items may give clues to important facts.

2.2.3 Considering that some of the facts and evidence collected during a Preliminary Inquiry may be used in a Formal Inquiry or even in litigation before a Court of Law, it is necessary that the investigator is advised on such legal aspects as statements "under oath", summoning of witnesses, etc. Such advice is normally in the form of written instructions from the Ministry.

2.2.4 Since the preliminary inquiry is not held in public, its findings are not normally published, particularly in the United Kingdom. Interested parties however do often apply for, and are given, the facts surrounding a particular case. Capt. Cockroft (4) is among those who assert that this method of disseminating the findings of an investigation is inadequate in providing the lessons that are available through a study of the circumstances of an accident.

2.2.5 A major purpose of the investigation is thus defeated. Neither is the publication of part of the result as Merchant Shipping Notices (in the United Kingdom) enough, the weakness being lack of sufficient indication of the circumstances leading to a given casualty. These Notices, though useful in their own way, are generally not detailed enough.

2.2.6 The findings and verdict of the Civil Court, often involving liabilities of large sums of money, provide some of the gravest lessons for the individuals concerned. However, the results of civil litigation come, often, years after the casualty (three to seven years in West Germany (8)). Even more pertinently, most cases end in arbitration outside the Civil Court; such findings are seldom, if ever, published.

2.3 FORMAL INVESTIGATION

A formal investigation is a public or judicial inquiry held after or instead of a preliminary inquiry as a government may decide. It is conducted by a Court (or Commissioner or Inspector) appointed under the Merchant Shipping Act. He is almost always assisted by assessors having the appropriate professional background considering the type of casualty involved. In the United Kingdom and most other Commonwealth countries e.g. India, Canada, etc., the assessors are selected from a list of experts maintained by the Maritime Safety Administration.

2.3.1 A formal investigation is normally held when one or more of the following conditions are true:

- .1 the preliminary inquiry has not brought out all the facts;
- .2 the accident occurred under avoidable circumstances;
- .3 the casualty resulted in serious damage to property or loss of life;
- .4 a formal investigation (held in public) offers a good chance of preventing similar accidents by bringing the contributory factors to the attention of the general public through the press, radio and television;
- .5 the casualty has attracted much attention and shaken public confidence in shipping; that the administration and shipping industry are seen to be genuinely endeavouring to correct errors and to improve safety, must be a confidence booster;
- .6 alleged default or negligence on the part of the master or officers;
- .7 the need to deal with the Certificate of Competency of the master or officers.

2.3.2 If during a formal investigation evidence is found of criminal conduct or behaviour in violation of the laws of the country, such evidence is forwarded to the Justice Ministry for consideration of prosecution of the offender.

2.3.3 A formal investigation can take a long time, several months in some cases. This often results in large costs. The desired outcome therefore frequently determines whether such an investigation is embarked upon or not.

2.3.4 Mr. Harrold (9) cites the case of the "Kurdistan" where a million pounds was said to have been spent over a ten week period conducting a formal investigation. It was eventually found that a badly repaired bilge keel was responsible for the breaking in two of the British vessel in Canadian waters, posing a threat of oil pollution. He was satisfied that such a result "could certainly have been reached in a more sensible manner".

Apparently, "pending litigation" and "considerable pressure from the Canadian Authorities" were the main factors that tipped the scales in favour of a formal investigation, Mr. Harrold concludes. Thus the weight of public opinion and the clout of political considerations in matters of this nature are obvious.

2.4 Generally, because of vested interests as stated above, unless strenuous efforts are made to unearth and present the facts, a number of casualty investigations are bound to be unsatisfactory. Further factors among others to be kept in mind as being capable of reducing the value of the outcome while conducting or studying an investigation are:

- .1 the instinctive self preservative tendencies that humans sometimes exercise involuntarily;

- .2 the tampering with, concealment or even destruction of, the evidence whether intentionally or otherwise, e.g. during salvage, repairs, or as a result of foundering in deep water;
- .3 the with-holding of relevant information to protect commercial or other interests;
- .4 unavailability or lack of use of relevant professional help.

2.5 THE INVESTIGATOR

The investigator for the preliminary inquiry has to be a well trained, highly experienced and responsible officer, duly appointed under the Merchant Shipping Act. He has to appreciate the enormity of his responsibilities, recognizing that his report may form the basis of far reaching decisions, often affecting the careers and livelihood of many of those involved in the accident he is called upon to investigate.

2.5.1 It is therefore incumbent upon the investigator to give serious and constant consideration to the following points:

- .1 the need of patience and understanding in examining witnesses many of whom would have gone through a highly emotional experience;
- .2 to imagine himself as being involved in the accident and thus be more able to understand and

appreciate the reaction of the witnesses;

- .3 in considering an act of omission or commission to make a distinction between "error of judgement" and "negligence", the former being a genuine mistake while the latter is culpable carelessness;
- .4 remembering the perils of the sea, to give the benefit of doubt to the seafarer;
- .5 at all times to keep in mind the purpose of his investigation;
- .6 to ensure that the proceedings and the report he submits to his superiors form a sound basis for further decisions on whether to proceed with the matter or not; the prerogative however belongs to his superiors, regardless of his conclusions and recommendations.

2.5.2 The head of a Court of formal investigation is usually a person experienced in legal matters and who has a good knowledge of the field of the particular investigation. He is often assisted by one or more assessors widely experienced in the professions entailed in the matter being investigated.

CHAPTER THREE

TYPICAL PROCEDURES IN DIFFERENT COUNTRIES

3 UNITED STATES OF AMERICA

3.1 In the USA, the regulations governing marine casualties are contained in 46 CFR 4 (46 Code of Federal Regulations Part 4). There are two main agencies engaged in Marine Casualty Investigation; these are:

.1 The United States Coast Guard (USCG)

.2 The National Transportation Safety Board (NTSB)

3.2 The responsibility of investigating marine casualties lies mainly on the USCG, but accidents on fixed Outer Continental Shelf (OCS) facilities are investigated by the Mineral Management Service (MMS) of the Department of Interior. Where responsibilities overlap, the primary agency regulating an operation, appliance or system will lead the investigation and be supported by the other as the circumstances of each case dictate.

3.3 Clear guidelines are laid down in a Memorandum of Understanding between the Coast Guard and the Department of Interior. (See VII of the CG/DOI MOU of 18 December 1980).

3.4 A similar Memorandum of Understanding exists between the USCG and the Department of Labour/Occupational Safety and Health Administration (OSHA) enabling co-operation between the two agencies when the Secretary of Labour is

obliged to investigate marine accidents and deaths involving employees covered by the OSHA Act. (See MOU of 19 December 1979).

3.5 The USCG has Investigating Officers (I.O's) who are expected to:

- .1 have a very good knowledge of the Marine Safety Laws and their implementing regulations;
- .2 know very well the regulations on the Freedom of Information Act and on the Privacy Act in order to avoid infringing the legal rights of witnesses;
- .3 thoroughly familiarize themselves with the regulations of the NTSB regarding the investigation of certain marine accidents;
- .4 have passed through the appropriate USCG training system, thus ensuring firm knowledge in marine matters such as Navigation, Ship Handling, Piloting, Seamanship, Rules of the Road at Sea, Marine Laws, Accident Investigation, Tugs and Towing, including legal aspects;

3.6 THE NATIONAL TRANSPORTATION SAFETY BOARD

The National Transportation Safety Board (NTSB) is an independent federal agency which may investigate or cause to be investigated, major marine casualties or those involving public/non public vessels. Regulations and a Memorandum of Understanding, MOU, signed by both agencies on 28 September 1981, clarify the conduct of proceedings

involving both agencies. (46 CFR 4.40 and 49 CFR 850. Marine Safety Manual 3-16)

3.6.1 The main marine investigative activity of the NTSB lies in areas where the Coast Guard may be compelled by the circumstances of a particular case to investigate an accident involving one of its own vessels or a public (government)/non public vessel, resulting in at least one fatality or USD 75,000 in property damage. It also handles investigations of some major marine casualties (see 3.16) particularly those concerning significant safety issues bearing on Coast Guard functions such as:

- .1 Search and Rescue;
- .2 Vessel Traffic Systems;
- .3 Aids to Navigation;
- .4 Commercial Vessel Safety.

3.6.2 The NTSB, being more strictly a fact finding rather than a regulatory or disciplinary organization, does not use stringent courtroom-style methods of questioning witnesses. Its investigators are therefore not seen as adversaries. Lawyers may advise their clients but are not allowed to question other witnesses. One of several investigation options may be adopted. The NTSB may :

- .1 conduct an investigation under its own rules;
- .2 participate with the USCG in collecting the facts under CG rules then do the analysis and publish the report;

- .3 request the CG alone to investigate and give the facts to it;

3.6.3 Under the NTSB format, an investigation is split into three main phases:

- .1 the field phase for gathering facts;
- .2 the analysis phase for processing the facts;
- .3 the report phase for bringing out the findings.

3.6.4 The report may be issued as a "Brief", a "Summary", or a "Major Accident Report" depending on the severity of the case. A public hearing (not before a judge) might normally have been held as part of the fact finding phase before a major report is issued. Thus the terms "Preliminary Inquiry" and "Formal Investigation" refer to different stages of the NTSB investigation rather than to different forms as in the U.K. for example.

√ 3.7 The NTSB tries to improve maritime safety by:

- .1 removing (rather than punishing) incompetency by retraining or rehabilitation;
- .2 requesting treatment for, and satisfactory proof of cure from, medical conditions;
- .3 suggesting improvements in regulations and procedures;

- .4 collaborating with manufacturers and classification societies to highlight the connection that sometimes exists between poor design, maintenance, and subsequent accidents;
- .5 impressing it on owners and operators to accept responsibility for and solve institutional problems which promote accidents; this refers to such problems as:

- poor training;
- selection of employees only marginally fit technically and or medically;
- unclear instruction manuals;
- unsafe economies.

3.8 The NTSB also investigates casualties occurring in other modes of transport such as: road, rail, air, and pipeline.

3.9 REPORTING TO THE COAST GUARD

The owner, agent, master, or person in charge of a U.S.-flag commercial vessel or a foreign flag vessel in U.S. waters is obliged to report to the nearest USCG Marine Safety or Marine Inspection Office, a casualty resulting in any of the following conditions:

- .1 an accidental grounding;

- .2 an intentional grounding which also meets any of the other reporting criteria or creates a hazard to navigation, the environment, or the safety of the vessel;
- .3 loss of main propulsion or primary steering, or any associated component or control system, the loss of which causes a reduction of the manoeuvring capabilities of the vessel. Loss means that systems, component parts, sub-systems, or control systems do not perform the specified or required function;
- .4 an occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, failure of or damage to fixed fire extinguishing systems, life-saving equipment, auxiliary power generating equipment, or bilge pumping system;
- .5 loss of life;
- .6 injury causing a person to remain incapacitated for more than 72 hours; or
- .7 an occurrence not meeting any of the above criteria but resulting in damage to property in excess of USD 25,000*; damage includes cost of restoring the property to the service condition which existed prior to the casualty, but excludes cost of salvage, gas freeing, dry docking, and such items as demurrage.

* Owing to the effect of inflation, this value may be changed occasionally.

3.10 In addition, the U.S. Department of Transportation National Response Center is to be immediately informed by the person in charge of a vessel or facility (or by any other person who has knowledge of the occurrence) if oil ~~or a~~ hazardous substance is released.

3.11 If a master, owner, agent, charterer, managing operator, or any individual in charge of a vessel or facility fails to report a casualty, he is liable to a penalty.

3.12 For the purpose of facilitating advance reporting to the USCG Commandant and the appropriate agency outside the CG, certain marine accidents have been classed as follows:

- .1 Significant Marine Casualty;
- .2 Serious Casualty;
- .3 Public/Nonpublic Vessel Casualty;
- .4 Major Marine Casualty.

3.13 A Significant Marine Casualty is that one requiring advance reporting to the Commandant but which cannot be described as major. It includes, but is not limited to, those vessel casualties involving:

- .1 multiple deaths;

- .2 single death caused by unusual circumstances;
- .3 a threat or potential threat of hazard to life, property, or the marine environment resulting from, for example, sinking of a chlorine barge;
- .4 loss of an inspected vessel.

3.14 A Serious Casualty, as defined by the International Maritime Organization, (IMO), involves vessels of 1600 or more gross tons that results in total loss, including constructive total loss, of one or more vessels or loss of life on vessels of 500 gross tons or more.

3.15 A Public/Nonpublic vessel Casualty is that which involves a public and a nonpublic vessel and at least one fatality or USD 75,000* in property damage, which otherwise does not meet the criteria for classification as a major marine casualty. It requires an NTSB or joint USCG/NTSB investigation.

3.16 A Major Marine Casualty includes casualties or recreational boat accidents involving vessels other than public vessels and resulting in one of the following:

- .1 the loss of six or more lives;
- .2 the loss of a mechanically propelled vessel of 100 or more gross tons;
- .3 property damage initially estimated at USD 500,000* or more;

- .4 serious threat (as determined by the Commandant with concurrence by the NTSB Chairman) to life, property, or marine environment, by hazardous materials, or other catastrophic marine accident.

* Owing to the effect of inflation, this value may be changed occasionally.

3.17 ACTION ON RECEIPT OF INFORMATION ON SIGNIFICANT CASUALTY

As soon as information on the occurrence of a Significant Marine Casualty is received, the Officer in Charge, Marine Inspection (OCMI) of the USCG is obliged to inform:

- .1 the Casualty Review Branch;
- .2 the Commandant, who informs the NTSB Chairman;
- .3 the District Commander.

3.18 The most rapid means available (usually telephone), is to be used. He must insist that he was reporting a significant casualty and that personnel, even if off duty, should be informed. This notification must be based on reliable information and should contain such essentials as:

- .1 name/s of vessel/s involved;
- .2 nationality;

- .3 official number;
- .4 location of the accident;
- .5 known and possible deaths and serious injuries;
- .6 nature of casualty.

3.19 Relay of these essential facts should not be delayed although some may be of questionable accuracy. Details are confirmed later by the appropriate message. (See Annex 2. Marine Safety Information System (MSIS) Sample Notification Form).

3.20 A sufficient number of Investigating Officers and technical personnel are immediately dispatched to the scene to commence investigations. This enables the timely gathering of evidence (written or verbal) before some of it inevitably fades from the memory of the witnesses some of whom may even leave the scene soon after the accident.

3.21 ON-SCENE ACTIVITIES

At the site of a casualty, the OCMI (Officer in Charge, Marine Inspection, or the Captain of the Port) directs and maintains routine on-scene activities such as:

- .1 search and rescue;
- .2 pollution response;
- .3 emergency services e.g. Fire, Ambulance, Police, etc.;

- .4 succouring to survivors;
- .5 managing traffic in the affected waterway;
- .6 allowing salvage operations.

3.22 He also secures the scene from sight-seers and looters until the investigators have seen the site and taken evidence. Other activities, which may be shared with the NTSB as per the MOU include:

- .1 prompt identification of witnesses;
- .2 preliminary arrangements for interviews;
- .3 detention of vessel or crew members as necessary and appropriate;
- .4 formation of investigative groups among on-scene parties, these being normally marine organizations, knowledgeable experts, or agencies capable of extracting facts out of the circumstances of a given casualty; each group is in charge of an aspect of the fact finding process such as: human factors, operations, engineering, structures, recorded communications, charts, bell books, log books, course recorder, weather, witnesses.

Some of these aspects may be grouped together, depending on the availability or otherwise of resources.

3.23 Members of these groups need to have had some training and technical expertise in the matter on hand and

should work under a chairman or leader who, under NTSB rules, must be an officer of this Board.

3.24 Other on-scene activities are:

- .1 provision of CG documentation of vessel inspection, certification, and licensing history of the vessels and persons involved as may be requested by the Investigator in Charge;
- .2 provision of air/water transport if needed;
- .3 pursuit of enforcement activities as clearly separate from NTSB investigation, should evidence indicate possibility of civil or criminal penalty, suspension and revocation, or court-martial proceedings;
- .4 holding of periodic progress meetings to keep parties informed;
- .5 holding periodic news media briefings on progress of the investigation when a designated sole public spokesman may release information;
- .6 making arrangements for any tests, research, readout of recorded data, transcription of radio recordings, preparation of exhibits for later use;
- .7 setting the time, place, and making other arrangements for a public hearing, as may be necessary.

3.25 From the above, a decision is made on what type of investigation to hold, i.e. routine, formal, or Marine Board.

3.26 ROUTINE INVESTIGATION

The procedure for a routine investigation depends on the significance of the case and the availability of witnesses and resources. This type of investigation ranges from a simple review of the notice of casualty to a proceeding just short of a formal investigation along Marine Board lines but held at unit level.

3.27 Parties in interest are not designated as a matter of course by the Investigating Officer, but affected individuals, organizations, or entities may apply to be thus designated. Witnesses are often contacted separately; facts may be obtained by correspondence, (letters, forms, etc.,) telephone, interviews, signed or unsigned statements, given or not given under oath. Confidentiality is not implied.

3.28 FORMAL INVESTIGATION

A formal investigation is held at unit level by qualified officers appointed by the district commander taking into account the advantages to be gained and the means available. Some of the main factors to be considered before instituting such an inquiry are:

- .1 need for changes to the Coast Guard policy or regulations;

- .2 to highlight problems involving vessel class, equipment, etc.,
- .3 to indicate operational procedures giving safety lessons with broad application.

3.29 The Investigating Officer designates all the parties in interest, exhibits are tendered and testimony, given under oath, is recorded verbatim. . .

3.30 All formal investigations are open to the public except when classified material or issues affecting national security are being considered. If after the on-scene investigation it is decided that the NTSB will conduct a public hearing (usually within two to six weeks) the USCG co-operates according to the MOU, continuing however to gather evidence for use if there is perceived need for a Suspension and Revocation, or Civil Penalty hearings.

3.31 MARINE BOARD INVESTIGATION (MBI)

This is the highest form of formal investigation undertaken by the USCG if the circumstances warrant it. Some of these conditions are:

- .1 the weight of the preliminary evidence;
- .2 the magnitude and significance of the casualty;
- .3 evidence that safety of life and property will be further enhanced by the lessons to be learned, e.g. class problems, issues of technical importance, etc.;

.4 satisfaction of public interest.

3.33 The appointment of an MBI by the Commandant ensures that every aspect of a given casualty is probed. Naturally, this often results in high costs, up to six months or even more time being allowed for the submission of the report.

3.34 MEMBERSHIP OF THE MBI

The Board usually consists of two or three members, the senior member being the chairman, the junior the recorder and whose professional qualification must complement that of the chairman i.e. if one is primarily experienced in deck matters, the other has marine engineering experience. These are all senior members of the USCG, the chairman having wide experience concerning the type of casualty being dealt with. Specialists and technical experts may also be designated to assist the board.

3.35 DUTIES OF THE RECORDER

The recorder undertakes a large number of duties before, during, and after convening of the board. Some of these are:

- .1 collection of all available evidence from the Investigating Officers (I.O's) or the Officer in Charge, Marine Inspection (OCMI).
- .2 logistic arrangements as to place of the hearing and provision of equipment such as:

- Public Address system;
- waiting room;
- provisions for display of evidence, charts, pictures, sketches, etc.;
- security for the participants and spectators;
- communication (phone) facilities;
- press information arrangements;
- stenotype recording;
- tape recording (if considered appropriate);
- safety and security of all exhibits;
- notifying witnesses and other participants and officials;
- keeping track of the expenses being incurred and informing the chairman accordingly;
- keeping the Commandant informed daily.

3.36 ASSISTANCE FOR THE RECORDER

The Recorder is assisted in the performance of his duties by the District Commander. Legal assistance, if required, is provided to the witnesses, some of whom may be USCG personnel.

3.37 FINANCIAL SUPPORT

Funding of a Marine Board Investigation is normally shouldered by the commander of the district in which the investigation is convened. If extraordinary expenses are required, such as for extensive diving operations, court services, technical research and reports, additional funds may be requested from the Commandant.

3.38 PREPARATION OF THE REPORT

After all the evidence has been collected, and the witnesses examined and cross-examined until the members of the board are satisfied, the board decides how best to complete the report. Different aspects are assigned to each member to report on. After the first draft is circulated, members review it, noting any suggested changes. They then meet, discuss the changes and produce the final report. Several interim drafts and reviewing meetings may be necessary. The final report, prepared according to the rules, using the appropriate forms where necessary, is submitted directly to the Commandant.

3.39 INVESTIGATION RECORD

The MBI record of proceedings, submitted to the commandant consists of the following:

- .1 the precept (convening order) and any modifications thereto;
- .2 the complete transcript of testimony and statements;

- .3 exhibits;
- .4 the narrative report, signed by all members of the board;
- .5 pertinent non-evidential materials and the entire administrative letter file.

3.40 OTHER TYPES OF REPORTS

There are several other types of reports, depending on the severity of the casualty and the kind of investigation conducted. They are, in ascending order of thoroughness:

- .1 a 2692 report;
- .2 a letter of transmittal report;
- .3 a narrative report.

3.41 When the cause or causes of a casualty are self-evident or readily developed in a few words from the available evidence, submission of a completed form CG 2692 (with some additional entries if necessary) will constitute a completed investigation.

3.42 A letter of transmittal is a report of one or several paragraphs used to cover simple casualties for which, after the initial on-scene investigation, a narrative report is deemed unnecessary. A Suspension and Revocation, or Civil Penalty proceedings may however be recommended.

3.43 A narrative report is generally required for more serious and complex cases in need of a more detailed analysis than is provided by a 2692 report or a letter of transmittal report. It is prepared according to laid down guide lines. Prescribed forms (CG 2692 or CG 2692A) are used as enclosures to the last two and MBI reports.

3.44 The 2692, letter of transmittal, and narrative reports are normally transmitted directly by the OCMI to the Commandant or they may be forwarded via the district commander when:

- .1 they contain comments or recommendations concerning the adequacy or otherwise of Coast Guard performance or operational programmes;
- .2 they involve possible culpability on the part of an officer or employee of the government;
- .3 they involve possible claims against the government;
- .4 they contain recommendations requiring action by the district commander;
- .5 the investigation was convened by the district commander.

3.45 CIVIL PENALTY, CRIMINAL, SUSPENSION AND REVOCATION (S&R) PROCEEDINGS.

The USCG Marine Safety Manual clearly points out that although frequently stemming from marine casualties, civil penalty and S&R proceedings are entirely separate from

those pertaining to casualty investigation. The purpose of casualty investigation is to determine the cause or causes of a casualty after ascertaining the facts. It is not a trial, nor is its purpose to determine guilt or innocence of individuals. Therefore these procedures should not be combined.

3.46 Where there is evidence in a casualty investigation suggesting civil, criminal, or S&R proceedings, a separate investigation should be instituted and processed. The casualty report should include evidence of violation, misconduct, negligence, etc., but should not state categorically that the person is guilty. A recommendation that further investigation is appropriate should be included.

3.47 USE OF COAST GUARD PERSONNEL AS WITNESS

Evidence taken during a casualty investigation particularly for civil penalty proceedings, may be used in a court deliberating a dispute between litigants. The weight of such evidence however may depend on how it was taken from the witnesses i.e. under oath or not, signed or unsigned. A USCG I.O. may be requested by subpoena to testify as a witness in such a purely private case. His availability and or deposition are however subject to strict CG conditions. He cannot, for example, be used as an expert witness. Coast Guard investigative documents may, within limits, be copied and produced in court.

3.48 PERSONAL INJURY OR DEATH

All deaths or injuries leaving the victim incapacitated for 72 hours or more, occurring on US ships or vessels in

US waters, are to be reported. Every such incident requires thorough investigation to ascertain the cause. Apparent natural deaths, homicides, and suicides are required to be adequately inquired into to establish that the death was in fact non-accidental. When the evidence suggests foul play, a law enforcement agency such as the police or the Federal Bureau of Investigation is to be informed.

3.49 DEATHS AND INJURIES NOT OCCURRING ON BOARD

Generally, the death of a seaman ashore is not a reportable casualty. If however the illness was initially contracted or discovered on board, then the conditions there should be investigated to determine whether they contributed to the incident and whether proper care was given aboard. The aim of such investigation is the promotion of safety of life at sea.

3.50 Cases directly involving a vessel's operation or appliances are reportable marine casualties. Examples of such deaths or injuries occur under the following circumstances, among others:

- .1 while handling a vessel's mooring lines ashore;
- .2 while on or handling a vessel's accommodation ladder;
- .3 being struck by cargo or other falling objects from the vessel while on the dock, pier, etc.;
- .4 while diving from the vessel.

3.51 REVIEWING AND ENDORSING

The report of an Investigating Officer attracts attention to the actions taken by others, including senior officers. As such, the OCMI and or District Commander who reviews such reports is required to be vigilant in carefully weighing each case judiciously. Points to bear in mind include, but are not limited to:

- .1 statements contrary to the best interests of the nation;
- .2 libellous assertions;
- .3 statements that may involve the national agencies in litigation.

3.52 ERRORS AND DISAGREEMENTS

If the reviewing officer has only minor disagreements with the report, he may forward it with the endorsement: "Approved, subject to the following comments". He then indicates areas of disagreement. Should there be serious errors or disagreements in the findings, conclusions, and or the recommendations however, the report is returned to the I.O. for revision. Some such shortcomings are:

- .1 facts insufficient, incomplete, or obviously in error;
- .2 conclusions in conflict with or not supported by the facts;

- .3 recommendations unsound, not pertinent or contain erroneous citations;
- .4 contents include improprieties, imprudent disclosures, or extraneous matter;
- .5 basic purpose of the investigation not satisfied.

3.53 FINAL APPROVAL

The OCMI, by signed endorsement, serves as the final approving authority for all reports not requiring a district commander's endorsement and or a Commandant's Action.

3.54 The District Commander, by signed endorsement, finally approves all reports submitted through the district that do not require a Commandant's Action (i.e. letter of transmittal reports for cases not involving death).

3.55 The Commandant, in issuing a Commandant's Action, serves as the final approving authority for all narrative reports, all marine board reports, and all letter of transmittal reports involving death.

3.56 CUSTODY AND RELEASE OF MATERIAL

Marine Board investigation reports are required to be retained for a period of 25 years; other casualty investigation records for 10 years. Copies are retained at the field office and also by the District Commander for public access, under specified conditions.

CHAPTER 3A

3.57

THE REPUBLIC OF LIBERIA

The Republic of Liberia is a flag state with one of the largest tonnages on register worldwide, with a total of 93,987,093 Dead Weight Tons in 1988. (10A). Most of these ships use the open registry offered by the Republic as what is often called a "Flag of Convenience" facility. In spite of this somewhat unsavory appellation and the inherent difficulties of administering a marine safety programme involving ships whose owners, operators, masters and crew are usually of various foreign nationalities and ordinarily not resident in the flag state and therefore largely not under its jurisdiction, Liberia is now reported to have put such an effective casualty investigation machinery into operation that her previous reputation of having sub-standard ships on register is now definitely in the past, the difficulties having been "satisfactorily surmounted". (2)

3.58 The decline (9A) in the casualty rate of the Liberian fleet especially from the late sixties up to date, (Annex 3A,B) must have been contributed to in a fair measure by the increased and assiduous application of the lessons offered through investigating casualties among fleets home and abroad. As clearly observed by Mr. W.H. Tench, (16) formerly Chief Inspector of Aviation Accidents, Department of Trade, U.K., to consider a favourable change in the accident rate as entirely due to more effective methods of casualty investigation "would be unrealistic; but there can be no doubt that it has made a

significant contribution". This should make a comparison of the procedure of casualty investigation used in Liberia with those of other major maritime nations rewarding.

3.59 AUTHORITY AND RULES

The marine administration derives its authority from the Liberian Maritime Law and makes rules incorporating local and international requirements for investigations and hearings. These proceedings are essentially remedial, the objective being the promotion of safety of life and property at sea. The following points are particularly looked for:

- .1 causes of difficulties experienced;
- .2 possible means of avoiding such difficulties in future;
- .3 violation of any laws;
- .4 failures or faults by ship's personnel, owners, or operators requiring action concerning certificates, licences and other documents.

3.60 PROCEDURE

The procedure of casualty investigation in the Republic of Liberia closely resembles that of the United States Coast Guard in such respects as the definition of casualty, organization of Investigation Officers, taking of evidence, publication of reports, etc. In fact the office of the Deputy Commissioner of Maritime Affairs is at Reston, Virginia, USA. Over the years however, material

gleaned from practical experience has replaced much of the methods originally used, some of which were also adapted from the former rules of the United Kingdom. (18)

3.61 The Inspection and Investigation Division has a network of Inspectors and Permanent Marine Safety Offices located in different countries around the globe. These ensure that Liberian vessels are periodically and carefully examined and casualties involving them or other vessels in Liberian waters are promptly investigated.

3.62 REPORTING

The Liberian Maritime Regulations make it incumbent on the master or owner (or bareboat charterer) of a Liberian flag vessel, or of a foreign vessel in Liberian waters, involved in a casualty, to immediately forward a report thereon, signed by the master or the highest ranked available officer or ship's representative to the Commissioner of Maritime Affairs whenever the casualty results in any of the following conditions:

- .1 actual physical damage to property in excess of USD 50,000;
- .2 material damage affecting the seaworthiness or efficiency of a vessel;
- .3 stranding or grounding;
- .4 loss of life; or
- .5 injury causing any person to remain incapacitated for a period in excess of 72 hours.

These conditions are closely similar to those defined as a significant casualty by the USCG.

3.63 These reports are not made public unless introduced in evidence during a formal Investigation. Where a Formal Investigation follows, the report of a Preliminary Investigation is normally ordered by the Bureau to be published. The vast majority of cases reported however are said not to reach the Formal Investigation stage; though all but the smallest casualties are reportable, most are taken care of during the Preliminary Investigation.

3.64 Cases investigated between 1967 and 1988, with all reports available, total 168. (9A). Of this total, 102 were decided by Preliminary Investigation, 33 by Formal Investigation, 26 by Administrative Determination. There were 5 Suspension and Revocation hearings and 2 were by Decisions Only, that resulted from acceptable findings of adequate investigations conducted by other affected authorities.

3.65 PRELIMINARY INVESTIGATION (P.I.)

A preliminary investigating officer, appointed by the Commissioner or a Deputy Commissioner proceeds as soon as possible to where the relevant casualty has occurred. He takes written statements (often unsigned), makes notes and may tape-record oral evidence given by the officers and ratings concerned. He also takes such other available evidence as log-books, course recorder traces, photographs, and statements from third parties witnesses to the occurrence.

3.66 PRELIMINARY INVESTIGATION REPORT

The investigating officer prepares a report for the Office of the Deputy Commissioner of Marine Affairs, giving details of the vessel, the officers and crew, and also of the events leading to the casualty. He concludes with his findings on the cause or causes of the accident and then recommends measures to prevent recurrence. He may also recommend action against the licence of one or more officers or the permits of the operators and owners.

3.67 FORMAL INVESTIGATION (F.I.)

The Deputy Commissioner uses the P.I. report to decide whether or not to hold a Formal Investigation which, apart from the depth of investigation and formal presentation of evidence, is employed in exactly the same way as a Preliminary Investigation, that is as a fact finding exercise. It may be held before a single investigating officer, with or without assessors.

3.68 The Commissioner may, for a major casualty, appoint a Marine Board of Investigation, having three to seven members with a very experienced lawyer or judge as the Chairman. The legal department of the Bureau, with the assistance of the Investigation Division organizes and supervises a F.I. When, in the course of collecting evidence, an indication of criminal behaviour appears, the Justice Department is to be immediately informed. A witness may be represented by counsel. If not, he shall be so advised if he appears to be incriminating himself.

3.69 A F.I. is usually held in public, taking the location of the parties involved and of the public interest generated by the casualty into account. London, New York, and Reston have been used most of the time.

3.70 One peculiarity of the Liberian F.I. is that a statement of facts to be proven - an "offer of proof" - is not made by counsel at the commencement of the hearing, but the evidence is developed as witnesses are questioned. When hearings are concluded, a decision is not announced by the chairman or investigating officer. The Board may continue private sittings until a decision is reached. A report containing the findings, conclusions and recommended actions is then sent to the Commissioner who, after a careful consideration, gives a written decision to be attached to and printed with the report.

3.71 APPEALS

The Commissioner may, before his final decision, call for further arguments; these are submitted in written form through the Investigation Division. He may, in exceptional cases, and when the circumstances of a given case satisfy him, order reopening of proceedings in which case the Law and Rules apply as in a new proceeding. This results in a Supplementary Report. Upon arriving at a final decision, the Commissioner authorizes the implementation of the relevant recommendations.

3.72 Certain marine offences attract Summary Action without any hearing. They include:

- .1 failure to appear at a hearing after being duly summoned;

.2 forging, fraudulently obtaining or unlawfully altering a licence or document issued by the Bureau;

.3 conviction of felony, etc.

3.73 A hearing must take place before a certificate or licence is suspended or revoked, when an alleged offence has not been proved.

3.74

CANADA

During the years up to 1976, Preliminary Inquiries into marine casualties in Canada were conducted by officers of the Ship Safety Branch of the Canadian Coast Guard as part of their normal duties. In 1976, the Coast Guard Commissioner established a special Marine Casualty Investigation Division responsible directly to him. (11A)

3.75 Since the Coast Guard, the parent body, continued to perform the regulatory and operational functions of the Marine Safety Administration, this arrangement was criticized to be not conducive to the independence of the investigative branch. It was felt this could lead to investigations that were not as impartial, objective, and open as should be.

3.76 The fundamental policies are therefore undergoing change, new legislation bringing the following main improvements:

- .1 Establishment of an independent Transportation Accident Investigation Board, functioning separately from the regulatory and operational body.
- .2 The Marine Casualty Investigation Division, currently still with the Ministry of Transport although functioning separately, will join the independent Board.
- .3 Investigation Reports now deal with safety only;
- .4 when the need for disciplinary action (for incompetency, drunkenness or gross negligence) or prosecution arises, the Coast Guard is required to conduct a separate investigation;
- .5 Except for the provisions of the Privacy Act, all Investigation Reports have become public documents.

3.77 DEFINITION OF MARINE CASUALTY

Under the new legislation (now Bill C142), (1A) the definition of marine casualty is covered by the term "marine occurrence" which means:

- .1 any accident or incident associated with the operation of a ship; and

- .2 any situation or condition that the Board has reasonable grounds to believe could, if left unattended, induce an accident or incident described above.

3.78 APPLICATION

In respect of marine occurrences, the Act applies:

- .1 in Canadian waters, (internal, territorial, or over the continental shelf);
- .2 anywhere
 - involving vessels registered or licensed in Canada; or
 - if Canada is requested by an appropriate authority to investigate; or
 - if a competent witness to, or person having information on, a matter that may have contributed to the marine occurrence, arrives or is found in Canada.

3.79 THE TRANSPORTATION ACCIDENT INVESTIGATION BOARD

This Board is to consist of not more than five appointed, full time and appropriately remunerated members, collectively knowledgeable about air, marine, rail, and commodity pipeline transportation. They are to hold office, during good behaviour, for up to five years, subject to removal for cause; a member may be re-appointed.

3.80 The Governor in Council designates one member as Chairman who then performs the executive functions of:

- .1 personnel, financial and property matters;
- .2 temporary engagement of persons with special or technical knowledge to assist the Board;
- .3 apportioning of work among members;
- .4 directing staff;
- .5 convening and presiding over meetings whenever work requires or upon written request of at least two members.

3.81 Two members constitute a quorum.

3.82 The object of the Board is to promote transportation safety by:

- .1 conducting independent investigations, and if necessary, public enquiries into transportation occurrences involving air, marine, rail and commodity pipeline modes in order to find out contributing factors and causes;
- .2 reporting publicly on the findings of its investigations and public inquiries;
- .3 identifying safety deficiencies;
- .4 making recommendations designed to eliminate or reduce such deficiencies.

The Board is not required to assign fault or determine civil or criminal liability; it must fully report on contributory factors even if fault or liability might be inferred.

3.83 Before making the report public, a copy of the draft is to be sent, on a confidential basis, to the Minister of Transport or to any other Minister or person who, in the opinion of the Board, has a direct interest in its findings, allowing the Minister or other person, a reasonable chance to make representations to it. It may reconsider its findings and recommendations at any time and shall do so if, in its opinion, new material facts appear.

3.84 Members may make bye-laws respecting conduct of business, classes of transportation occurrences to investigate and policies of procedure. They shall also determine the Board's findings, identify any deficiencies, and make the necessary recommendations.

3.85 STAFF AND TECHNICAL ASSISTANCE

The Board may recruit staff, including investigators, and the Chairman, from among his staff, shall appoint:

- .1 a Director of Investigations (Air);
- .2 a Director of Investigations (Marine);
- .3 a Director of Investigations (Rail and Commodity Pipeline).

3.86 These three officers are to have exclusive authority to direct the conduct of investigations on behalf of the Board, to which they must report. They should have no conflict of interests.

3.87 POWERS OF THE INVESTIGATOR

The investigator has power, on reasonable grounds, to search, with consent of the person in charge or with a warrant, seize and test things, and exclude persons from a particular area. He may, by notice in writing, require a person to give evidence under oath or solemn affirmation, submit to medical examination which the person may not refuse. Information thus obtained however is privileged. In executing a warrant which specifically authorizes the use of force, an investigator is to be accompanied by a peace officer.

3.88 PUBLIC INQUIRY

Where the Board deems it necessary, it may designate a person or persons to conduct a public inquiry into a transportation occurrence, if the Governor in Council has not already done so.

3.89 RULES AND PROCEDURES

Though the existing rules are being revised and the Transportation Accident Investigation Board will eventually make the rules and prescribe the procedures according to the guidelines of the new Act, it can be safely assumed that certain fundamental requirements will have to be met. A vessel involved in a marine occurrence

for example must make a prompt report, giving such details as:

- .1 vessel's identity;
- .2 nature of the occurrence;
- .3 date, time, and location;
- .4 number of persons killed, missing or injured;
- .5 whether a pilot was on board the ship or ships;
- .6 any hazard to navigation;
- .7 pollution or risk of one to the environment;
- .8 cause or probable cause of the occurrence.

Such a report is normally on a prescribed form, but may be supplemented by a narrative.

3.90 The rules will also specify how witnesses are to be summoned, questioned, and evidence presented since the final report is now to be a public document; the prohibition of the use of any statement against the person who made it in any legal or other proceedings except under specified circumstances must also be considered.

CHAPTER 3B

3.91 FEDERAL REPUBLIC OF GERMANY

3.91.1 ENABLING LEGISLATION

A new Federal Law, the "Seeunfalluntersuchungsgesetz" (Marine Casualties Investigation Act) which entered into force on 1st October 1986 is the source of power for casualty investigation in the FRG. This act removed some of the problems inherent in the old system which has been in use for more than a century, revised over fifty years ago. Such deficiencies as inadequate legal protection and overlapping of competencies between the Federal and provincial or State authorities were removed.

3.92 PURPOSE OF INVESTIGATION

The purpose of the investigation is to find the cause or causes of marine accidents in order to avoid similar occurrences in the future. The lesson learned is used for any necessary review and further development of guidelines and rules. To take advantage of computer analytical technology, a "List of Codes for Annual Surveys of Marine Casualties" has been developed. This will help to identify causes of accidents and the predominant human factors in particular that have played such a major part in marine accidents.

3.93 INVESTIGABLE CASUALTIES

The following conditions are deemed to be casualties and must be reported to the Ministry of Transport:

- .1 unsafe operation of a vessel thus seriously endangering herself, the persons and property on board, the traffic or the environment;
- .2 serious damage caused or suffered by a vessel or her cargo;
- .3 grounding, foundering, the reported missing or abandonment of a vessel;
- .4 loss of life;
- .5 failure to render assistance to a vessel in distress;
- .6 a marine accident involving an officer having a FRG certificate or licence.

3.94 The master, seafarers, pilots, owners, members of trade unions, classification societies, etc. are required to report to the "Seeamt", the investigating authority, any casualty of which they have knowledge.

3.95 PARTIES INVOLVED

The parties to the investigation include the master, officers and pilot of the vessel involved in the accident; also such legal and natural persons that have been concerned, such as: owners, charterers, operators,

shipyards, repairers, Vessel Traffic System (VTS) operators, and the maritime administration.

3.96 THE INVESTIGATION BOARD

The ("Seeamt") is a state investigation board fully independent, answerable to the Federal Ministry of Transport only. Each board has a chairman, with a legal background and experience as a judge, and a nautical expert with a foreign going master mariner's certificate, experience and up to date knowledge. Both are full time employees appointed by the Federal Government. They are complemented by three assessors chosen by the Chairman, considering the requirements of the case. These three are from a list of experts prepared by the Ministry, from members of Classification Societies, the shipping industry, naval institutions, marine academies, etc.

3.97 INVESTIGATION PROCEDURE (11)

The Board, usually the Chairman himself, conducts its own preliminary investigation, often taking evidence informally. He has power to compel testimony. After this, a formal investigation is held if deemed necessary, the seriousness of the casualty and availability of safety lessons to be learned being the deciding factors. The procedure followed is the same as in ordinary courts; witnesses and experts are examined and cross examined under oath. Lawyers may assist the parties.

3.98 Hearings are held in public except under special circumstances. Criminal aspects are handled by the Courts after the investigation report is out. The Board, whose findings are similar to judicial decisions, has power to

deal with officers' certificates and pilots' licences in serious cases of drug or alcohol abuse, incompetency, or mental, physical or psychological defects. These may be revoked or suspended for at least one year, to be restored (if suspended) only after proof of attendance of, say, a radar course or medical certificate indicating a cure from drug or alcohol abuse.

3.99 APPEALS

Anyone who feels aggrieved may appeal the decision of the Board to the "Bundesoberseeamt" where a full rehearing is held if deemed necessary, under the same rules as the first Board. Its findings are conclusive but a further appeal to an administrative court ("Verwaltungsgericht") is possible for reconsideration of certain questions only.

3.100 REPORT

When the hearing ends, the Board prepares and publishes for public attention, a report consisting of:

- .1 a preamble giving the place, time, type of, and reasons for, the casualty;
- .2 a decision on errors, say in navigation, in the equipment, shortcomings in the fairway, navigation aids, etc.;
- .3 recommendations for the Minister's consideration and action;
- .4 explanation of the reasons for dealing with a certificate or licence.

3.101 CIVIL LITIGATION

The report may be used in civil litigation, but it is then subject to the normal rules of evidence of the court before which it is introduced. The Court determines what weight to give such evidence. Before such a court, a good defence lawyer with a large budget at his disposal to clear his client with, may, through extensive investigation and thorough research by highly qualified, respected, and often highly priced, experts, overturn the findings of the "Seeamt", which normally would be operating on a limited budget.

3.102

NETHERLANDS

Casualty Investigation started in the Netherlands from 1856, the current Shipping Law, as amended, coming into force in 1909. It covers all ships, including fishing vessels, except open fishing boats. The Casualty Investigation Division of the Ministry of Transport is in charge. The Division has two full time officers, relying on three area shipping inspection directors, each assisted by ten or more deputy inspectors, - surveyors doing the field investigations. That all investigations are done by steam ship inspectors from the regulatory body raises concern about conflict of interests.

3.103 REPORTING

Information on the occurrence of marine accidents are obtained from:

- .1 "protests" noted by ships' masters at the notary public following accidents;
- .2 Lloyds information service;
- .3 shipping agents;
- .4 ship owners;
- .5 classification societies;
- .6 ships' log books;
- .7 volunteers.

3.104 For inland waters, the master involved must fill a form and forward it to the Division.

3.105 PROCEDURE

Preliminary investigation takes three forms:

- .1 "attention" - something may be wrong;
- .2 "special attention" - something wrong, deserves further observations;
- .3 "greater importance" - full investigation necessary.

3.106 The investigator is empowered to board and search a vessel, compel testimony, and seize records and or equipment.

3.107 EVIDENCE

Usually, witnesses are interviewed "in camera" at the local investigation office. No advisers or recording equipment are used and statements are not under oath. The investigator prepares a draft of the evidence which the witness may or may not sign; a copy is given to him anyhow. All the statements and documents with the investigator's opinion are then sent to the Head, Casualty Investigations Division, who then decides which case to investigate further, depending on seriousness or lessons to be learned. Testimony is confidential and is not released to any third party except during a public hearing by the Shipping Court.

3.108 THE SHIPPING COURT.

This consists of a Chairman who is usually an appeal court judge and two full time members, one being a Navy Commander the other an experienced master mariner. It has a secretary who must be a lawyer.

3.109 Two to four specialists in various disciplines from a list of 12 to 18 experts kept by the Department are added. Therefore five to seven persons hear a case. The court lends a measure of impartiality to casualty investigation in the Netherlands.

3.110 On receipt of a report from the head of the Casualty Investigations Division, the Chairman and two other members decide if and when to hold a public hearing, announcing their decision publicly. Unless for clearly stated special reasons, hearings are open to the public.

3.111 Those primarily involved, e.g. the master and certificated officers, are notified as defendants; others may be so named and notified during the hearings. These can have counsel and access to the files given to the court by the Casualty Investigations Division. Witnesses, e.g. ship owners, cannot be represented by counsel.

3.112 In practice, the court follows the normal rules of evidence of the civil courts. Some of these rules are:

- .1 witnesses, not defendants, testify under oath;
- .2 Chairman reads statement given to investigators by witness, asks questions, other court members, Head of the Investigation Division, and the defendant or his counsel, ask questions. No recording instrument, e.g. tape recorder or stenography, is used. The Secretary writes down the testimony or its summary and the witness signs;
- .3 anyone with relevant information can ask to be heard; the Chairman decides whom to hear;
- .4 after the hearing, the Head of the Investigation Division summarizes, advising the Court if and what disciplinary action is to be taken. The

Court also has power to suspend a certificate for a maximum period of two years in cases of chronic alcoholism or incompetency;

- .5 the Court retires and, in simple cases, renders a verbal decision, giving reasons, the same day; otherwise a written one is given within a few weeks;
- .6 if a certificate is to be suspended or revoked, the Division prepares the necessary order, serves it through a bailiff, after which the time starts;

3.113 By referring to prior statements, the Chairman controls the questioning and avoids waste of time, enabling cases to be resolved generally in one day thus reducing costs. The Court remarks on the safety lessons learned and makes general recommendations. All decisions are published in the Official Gazette and also in an annual publication.

3.114 CIVIL LIABILITY

Since Preliminary Investigation interviews are held "in camera", and also not under oath, evidence which has thus been obtained may not be acceptable in litigation before a civil court. If all litigants agree however, copies of the statements of witnesses made to the investigators are given to each.

3.115 APPEALS

If, before a public hearing is held, anyone is aggrieved by the decision of the Head of the Division, the person may appeal to the Shipping Court. After a decision by the Court, no more appeal is possible, except mitigation by the Crown.

3.116 CRIMINAL PROCEEDINGS

Certain aspects of the Criminal Law cover marine casualties. These involve matters such as the Collision Regulations which are part of the national Law, a level of contravening of which may attract various fines or even imprisonment. Special criminal investigations have to be conducted for this purpose, however. There is a debate going on whether to remove the disciplinary powers of the Shipping Court and add them to the punitive ones of the Criminal Courts.

3.117

UNITED KINGDOM

Much of the procedure described in chapters one and two commencing with the definition of casualty in 1.1, refers broadly to the system used in the United Kingdom.

3.118 Enabling legislation for casualty investigation has been in existence since 1850, the current one being Merchant Shipping Act, 1970 amended and supplemented from

time to time for example, by the Merchant Shipping (Formal Investigations) Rules 1985, the Merchant Shipping Act 1988.(3A)

3.119 This empowers the Secretary of State to appoint inspectors of marine accidents, one of whom shall be designated the Chief Inspector of Marine Accidents. He also may make rules and regulations regarding, among others:

- .1 the definition of a "marine accident";
- .2 reporting requirements;
- .3 powers of the investigators;
- .4 appointment by any minister of the Crown of persons to review findings of the investigators;
- .5 procedures to be followed;
- .6 submission and publication of reports;
- .7 punishment, on conviction, by a fine.

3.120 REPORTING

Under the current rules, which apply to U.K. registered ships anywhere and any vessel in U.K. territorial waters, the master or owner of a ship involved in a marine accident is obliged to report same (on Form WRE1) to the Marine Division of the Department of Transport. This report is to be made as soon as possible after the accident; in any case not more than 24 hours after arrival

in port. It is to indicate the identity of the ship and briefly state the nature of the accident with time, date, place, vessel's current position and her next port of call. Casualty information is also received from HM Customs, Coast Guard Services, Lloyds Shipping Intelligence, etc.

3.121 INFORMAL/PRELIMINARY INQUIRY

Senior professional staff of the Division study the initial report and if the accident is considered insignificant, only a questionnaire may be sent for further details and the case is closed. This procedure is termed "Informal Inquiry". For a more serious accident, one or more inspectors from the Division are sent to investigate on the basis of a "Preliminary Inquiry" as generally outlined in 2.2. to 2.2.5. The Report is submitted to the Department and, until now (mid 1989), remains unpublished.

3.122 FORMAL INVESTIGATION

For the reasons broadly stated in 2.3.1, the Secretary of State may direct that a formal investigation be held into a major casualty. The Chairman or president of the Court is a Wreck Commissioner (Sheriff in Scotland) appointed, together with one or more assessors to assist him, by the Lord Chancellor who maintains a list of suitably qualified and experienced technical experts for this purpose.

3.123 If suspension or cancellation of an officer's certificate is likely, at least two assessors, with at least one qualified and experienced in the affected officer's field of work, must be used.

3.124 In practice, it is the Surveyor General who directs that a Formal Investigation be held. Usually, not more than two are held per year. The Treasury Solicitor acts for the Department of Transport and a Counsel is nominated by the Attorney General. These two decide who are made party to the investigation, giving them timely (at least 30 days) formal notice of the time and place of the hearings, the list of questions the Secretary of State would like answered, and any specific allegations levelled against each. The rules followed are in the Merchant Shipping Act (Formal Investigation) Rules 1985. (4A)

3.125 PROCEDURE

The Formal Investigation is held in public unless otherwise decided by the Commissioner who conducts the whole hearing in a proper and orderly manner. It commences with a statement by the Secretary of State, (more often his representative) followed by brief speeches on behalf of the other parties. Witnesses are then produced and examined by the Secretary of State who may also adduce documentary evidence. The parties may then cross examine and the Secretary of State may re-examine. The relevant questions for which answers are required from the Commissioner are then read by the Secretary of State. These questions may be amended at any time. All parties are entitled to make statements, call, examine and cross-examine witnesses and adduce documentary evidence.

3.126 After taking of evidence, any party may address the Commissioner upon the evidence. The Secretary of State may reply. At the discretion of the Commissioner, an officer whose conduct has been substantially criticized

may be invited to state why, if it is found that his conduct has contributed to the casualty, his certificate of competency should not be cancelled or suspended, or as to why he should not be censured.

3.127 RESULT

-- At the end of a Formal Investigation, the Commissioner shall:

- .1 if an officer's certificate is cancelled or suspended, give his decision concerning the certificate and a brief summary of his findings, in public;
- .2 whether a certificate is concerned or not, make a Report to the Secretary of State including his and his assessors' findings.

3.128 Each assessor shall either sign the Report, with or without reservations, or state his dissent and reasons in writing.

3.129 The Commissioner may order any of the parties to pay costs and expenses or a part thereof.

3.130 RE-HEARING AND APPEAL

Any re-hearing shall be under these same rules but appeals can be heard by the High Court or Court of Session.

CHAPTER FOUR

4 GHANA

4.1 LEGISLATION

The enabling legislation for casualty investigation in Ghana is the Merchant Shipping Act, 1963. Though rather aged and requiring updating in many respects, it still gives useful guidelines and authority. It resembles the British Merchant Shipping Act, 1894 (as amended) in the major areas of casualty investigation. (5A). (See Annex 4A, B, C.)

4.2 DEFINITION AND REPORTING

According to the Act, the following occurrences, caused or sustained by a vessel on or near the coast of Ghana, are considered shipping casualties and must be reported by the master or owner within 24 hours or as soon thereafter as possible:

- .1 stranding, loss, or damage to hull or machinery affecting seaworthiness or efficiency;
- .2 serious injury to any person or loss of life;

4.3 For ships registered in Ghana, additional requirements for reporting are:

- .1 if such a casualty as described above occurs anywhere;

- .2 if a witness of such a casualty is found in Ghana;
- .3 loss or supposed loss of such a ship with evidence of the circumstances of going to sea obtainable in Ghana.

The report is to contain the name and registration number of the vessel, her port of registry, present position, and nature of the casualty.

4.4 PRELIMINARY INQUIRY

Upon receipt of a report of a casualty, the receiver of wreck in whose area the casualty happened, a surveyor of ships or any other person appointed by the Minister of Transport, (Sec. 260) and thus given the powers of a surveyor of ships to conduct a preliminary inquiry, is required to:

- .1 board and inspect any ship, her machinery, equipment, certificates, and officers' certificates;
- .2 investigate the nature and cause of the accident or damage caused or alleged to have been caused or sustained;
- .3 examine on oath, requiring the evidence, verbal or written, of anyone he thinks fit to call;
- .4 prepare a report for the Minister of Transport;

Anyone who impedes such a preliminary inquiry attracts a fine. (Sec. 316)

4.5 FORMAL INVESTIGATION

The Minister of Transport, having studied the preliminary investigation report may, considering the circumstances, direct the investigator to apply to a Court of summary jurisdiction to hold a formal investigation. The Court shall do so. (Sec. 261 (1)). The Chairman or president of such a court is known as a Wreck Commissioner; he is appointed by the Chief Justice. (Sec. 268).

4.6 One or more assessors of nautical, engineering or other special skill or knowledge, are appointed by the Minister to assist. (Sec. 261 (3)). If suspension or cancellation of an officer's certificate may be involved, at least two assessors with merchant service experience must be used. Only a certificate issued in Ghana may be thus suspended or cancelled. The Court has summary, but not criminal, jurisdiction; if possible, even its premises should not be the same as for a criminal court. (Sec. 261 (12)).

4.7 PROCEDURE

Since the inquiry is a judicial one, the procedure for gathering and presenting evidence is along formal lines with witnesses sworn in, counsel allowed, court room rules observed. If a charge is made against any person, that person shall have the chance of making a defence.

4.8 The Minister (and the preliminary investigator) who has applied to the Court for a formal investigation is to

superintend and manage the case, rendering all assistance within his power to the Court.

4.9 THE REPORT

After the hearing, a report is to be made to the Minister containing:

- .1 a full statement of the case;
- .2 the opinion of the Court;
- .3 the evidence or extracts thereof;
- .4 observations of the Court.

4.10 Each assessor is to either sign the report or write his dissent and supporting reasons to the Minister who may order a complete or part rehearing if:

- .1 miscarriage of justice is suspected;
- .2 new evidence which could not be produced at the investigation is discovered.

4.11 APPEALS

The master, mate or engineer whose certificate has been suspended or cancelled or any other party affected by the decision, e.g. the owner, may appeal to the High Court.

4.12 THE PRESENT SITUATION

During the research for this work, the author found it extremely difficult, in fact impossible in most cases, to obtain any information, verbal or documentary, on the casualties enumerated in the introduction.

4.13 He has personal knowledge of some of these cases. He

- .1 has seen the hulks of the first two rotting away just offshore for many years;
- .2 was actively engaged in extinguishing the fire on the "Korle Lagoon", he being the master at the time;
- .3 took part in fighting the cotton fire, having been visiting the "Oti River" when it started;
- .4 sailed on the "Keta Lagoon" soon after her grounding repairs.

4.14 After the "Korle Lagoon" fire, the master remained on board for some nine months before proceeding on leave. Apparently his detailed report to the owners satisfied the Ministries too, for, to the best of his knowledge, no inquiry was made, neither was any lesson learned disseminated.

4.15 More than one year after the "Keta Lagoon" grounding, evidence was still being collected for an owner's inquiry which was held some time still later. That too must have satisfied the Maritime Administration of the Ministry of Transport.

4.16 The sinking of the "Bazamri" was said to have been investigated by the Ministries but the report could not be traced at the time. Instability as a result of excessive deck cargo of colanuts was said to have been the cause of the capsizing about an hour after the vessel left port with cargo and passengers.

4.17 The case of the "Amma Dela" throws much light on the present situation in Ghana. The 38 foot fishing boat capsized in the Tema fishing harbour on 17 August, 1985, resulting in the loss of 23 lives.

4.18 Following the public outcry and the obvious need to ascertain the facts, correct any mistakes and learn the lesson offered, the Secretary of Transport appointed a Committee of Inquiry three days later to hold public hearings and submit a report within two weeks.

4.19 The Committee apparently decided to conduct a more thorough and extensive investigation than was possible in two weeks, considering the expressed concern and anxiety of the government and people that such a calamity should never occur again.

4.20 It therefore took some two months for the investigation, interviewing a number of witnesses and receiving some memoranda and depositions. A report was prepared and apparently submitted to the Ministry a few months later. More than three years later, the report has yet to be made public.

4.21 Thus except for the "Amma Dela" case, there appeared to have been only one other safety investigation of the

significant casualties mentioned, with no report freely available for public use.

4.22 Recent accidents in the ports also appeared to have merited only departmental investigations by the Ghana Ports and Harbours Authority. The cases in view are:

- .1 a severe damage to the bauxite berth at Takoradi by the m.v. "Blix" on 29 January 1987;
- .2 an explosion of a pontoon undergoing welding renovation at Takoradi on Sunday 26 March 1989, an accident which resulted in property damage and loss of life.

4.23 The lack of a Formal Investigation authorised by the Ministry is not in itself bad if a thorough, unbiased departmental inquiry is held. However, the unavailability to the public of information on the facts, analysis, and conclusions made, is deplorable. Furthermore, without the buttress of the power of Government, safety and other recommendations, particularly those involving large expenditure, may be ignored by powerful commercial organizations, a point stressed by Sir W.H. Tench, (16) in a paper to the AGM of the Nautical Institute, 1988.

CHAPTER FIVE

5 A PROPOSAL

5.1 OBLIGATION

Ghana being a coastal state - (328 miles of Atlantic coastline on the Gulf of Guinea, West Africa); a port state - (two harbours, Takoradi and Tema); a flag state - (122,465 Dead Weight Tonnes of shipping on register in 1988, (10A) from 295,891 in 1981); a long standing member of the IMO, and whose illustrious son Dr. Thomas Mensah, Assistant Secretary-General, IMO, narrowly missed being elected to the office of Secretary General in June 1989, owes it a duty to herself, the IMO, and the international community as a whole, to run an effective maritime administration, with emphasis particularly on the safety aspects, any operation being doomed to failure if carried out without due respect to safety.

5.2 The obligations and benefits of a system of effective Maritime Casualty Safety Investigation - the methodical search for, publicizing, and application of, the lessons learned from marine accidents for the primary purpose of preventing such mishaps in the future - are clearly evident.

5.3 The situation currently existing in Ghana, as seen by this author and described in Chapter Four, leaves very much to be desired. Though much of the problem seemed to be the inability of the Shipping Department of the Ministry of Transport and Communications to keep and or

retrieve records on casualty investigation, it was also apparent that most of the major marine accidents listed in the introduction to this work did not receive the necessary attention at all. This absence of attention must be due, in the opinion of the writer, largely to a lack of appreciation of Ghana's national and international obligations.

5.4 To promote safety of life and limb of the personnel on her ships, in the ports and the shipping industry generally, and to ensure a safe, reliable, vibrant, and profitable maritime activity, is a national responsibility; while to fulfill her treaty obligations and contribute effectively to the safety of life and property at sea and to the maintenance of a clean marine environment is an international obligation that should not be shirked.

5.5 AVAILABLE HUMAN RESOURCES

Lack of adequately trained personnel with suitable experience and reputation may perhaps also be cited as a debilitating factor. Since the early sixties when Ghana began producing foreign going master mariners and chief engineers, particularly from the early seventies when graduates from the then Ghana Nautical College (now the Regional Maritime Academy, Accra) started coming out of British institutes with Master (Foreign Going) and Marine Engineer (First Class) certificates issued by the U.K. Ministry of Transport (or Board or Department of Trade or of Transport), there has been no lack, given adequate remuneration, of suitable human resources from which to make an excellent staff to operate a Marine Department. Other officers trained in the United States of America,

and in Europe (both East and West), as mariners and naval architects have been available, some for decades.

5.6 REMUNERATION

The issue of adequate, commensurate and attractive remuneration for shore jobs must be one of the most difficult barriers that have continued to keep a number of mariners, with the requisite training and experience required for maritime casualty safety investigation, still at sea. However, it is the view of this writer that if the cost/benefit effect of some of the foreign experts whose services have been and continue to be used in maritime matters is carefully balanced against that which can be provided by the native variety, a far more attractive proposition would have been made to those able Ghanaian officers that have been looking for the chance to serve ashore than has hitherto been made.

justified

5.7 With the current port rehabilitation programme in both Tema and Takoradi, it must be true that a fair part of the over USD 80 Million (1) spent annually on foreign consultancy services must be in the marine engineering, naval architecture, and nautical fields. It is therefore obvious that if the available human resource is carefully managed, and the aforementioned national and international obligations realistically weighed, the considerable value of this resource would be better appreciated.

5.8 ENABLING LEGISLATION

Another limiting factor may be said to be lack of an up-to-date Merchant Shipping Act. As stated in Chapter 4.1 however, the current Act gives the Minister of Transport

power to make rules and regulations (Sec. 269) affecting maritime matters. Therefore the present lack of clearly defined procedures for maritime casualty safety investigation in Ghana should not be very difficult to remove. The provision of suggestions in this regard is, as stated in the title, a target of this work.

5.9 CONFLICTS

The difficulty of balancing the assurance that witnesses to a casualty will give evidence freely without any fear of incriminating themselves or of exposing their colleagues and workmates to unscrupulous litigants later, against the need for disciplining or removing incompetency and or dealing with criminals as a deterrent to unlawful behaviour, is a malady faced by any administration engaged in casualty investigation.

5.10 Furthermore, when the authority investigating a marine casualty is the same that makes the rules for shipbuilding, operation, inspection, certification and navigation, then the charge of conflict of interests remains difficult to disprove.

5.11 On the other hand Ghana, with such a small tonnage on register, (125,679 gross tonnes in 1988. (10A)) need not burden herself with two large and fully manned departments of surveyors, one doing regulatory work and the other casualty surveys only. Even in the USA with the Coast Guard and the NTSB performing these functions more or less respectively, difficulties are still experienced, according to Prof. Colucciello, Chief, Marine Casualty Investigations Division, NTSB; visiting professor, WMU. (2A).

5.12 SOLUTION

It is therefore the suggestion of the author that in order to set up a viable Maritime Casualty Investigation system in Ghana, a commission, chaired by an experienced Master Mariner, assisted by a First Class Marine Engineer with adequate experience as a Chief Engineer, and a lawyer of the Ministry of Justice with Maritime Law experience, should be set up.

5.13 The work of this commission would be to consider all aspects of maritime casualty investigation and produce within three to five months, say, a manual to be used by the Ministry, investigators, surveyors, shipowners, repairers, mariners, etc. in the event of a reportable accident. It should contain, inter alia, guidelines on:

- .1 the initial information;
- .2 gathering of evidence;
- .3 conducting interviews;
- .4 form of the investigation report;
- .5 release of the report, etc., etc.

5.14 After this, the commission becomes an Independent Investigation Board, (I.I.B.) a small two-man board of independent investigators interposed between the preliminary investigation or fact collecting phase, and the full blown formal investigation conducted by a Wreck Commissioner, entailing lengthy public hearings. This

Board will be responsible directly to the Minister of Transport, but will work with the surveyors of the Shipping Division. The I.I.B. may board any ship of Ghanaian registry at any time for an unscheduled inspection. This is to ensure that the required standards are continuously maintained and not only at times of scheduled inspections or surveys.

It may also, in co-operation with the Chief Surveyor's Department, conduct Port State Control on foreign ships occasionally to keep abreast of developments. Furthermore, it should keep a good record, using modern computer technology, of all casualties and also co-operate internationally with other casualty investigation boards.

5.15 (FLOWCHART OF ORGANIZATION) (Annex 5)

5.16 The suggested system has the following advantages:

- .1 possible chances of conflict of interests between the investigatory and regulatory functions of one and the same department drastically reduced;
- .2 Board solely engaged in casualty investigation will promote efficiency of proceedings;
- .3 shorter time of investigations results in less expenses;
- .4 early release of the report will remove the present anomaly of no public reports or years of suspense;

- .5 the Board can, with authority, point out any shortcomings found in the maritime regulations;
- .6 while not infringing on the legal rights of witnesses, the Board can limit interference by lawyers with the expeditious conduct of the proceedings;
- .7 fair but not strictly courtroom procedures may be used to enhance efficient collection and presentation of evidence.

5.17 Further suggestions for inclusion in the proposed Manual are:

5.18 DEFINITION OF A MARINE CASUALTY

A marine casualty is an accident involving any vessel in the navigable waters of Ghana or in any waters involving any vessel registered in Ghana. These have to be reported to the Minister of Transport (or to a competent official authorized by him) by the master, owner, or anyone knowing the facts if any of the following conditions are met:

- .1 seaworthiness or efficiency of vessel impaired, e.g. by collision, grounding, stranding, foundering, capsizing, machinery or equipment breakdown, fire, explosion, etc;
- .2 loss or supposed loss of a vessel when evidence is obtainable in Ghana of the circumstances under which she proceeded to sea or was last heard of;

- .3 loss of life or serious personal injury requiring at least seven days incapacitation;
- .4 serious material damage to other property; (a lower monetary limit, USD 100,000.00 say, may be specified here).
- .5 pollution, or threat of pollution, of the environment.

5.19 REPORTING FORM

It is necessary to provide a form for reporting; this must be distributed to all registered ships, shipowners, shipyards, surveyors, maritime academies, etc. This is to enable the recipients to familiarize themselves with the reporting requirements. A typical format is shown in Annex 6A, 6B, 6C, 6D. A properly filled out reporting form will provide the Investigating Officer with the basic information about the ship, her owner, master, officers and crew, cargo, the type of casualty and the surrounding circumstances, etc. etc.

5.20 PROCESSING OF A CASUALTY REPORTING FORM

A casualty report made to the Minister should be handled by the Chief Surveyor who should study it and decide on one of the following options:

- .1 if a minor accident, for example a wharf contact resulting in minor damage, to file report and use for statistics only;
- .2 if more information is required, a surveyor of

the Ministry is asked to inspect the occurrence and report. It may be necessary to briefly question several witnesses;

- .3 for a major accident or where .1 and .2 above reveal the casualty to be more serious than initially thought, a surveyor of the Ministry is appointed as an Investigating Officer (I.O.) to conduct a Preliminary (or fact finding) Investigation, the Chairman of the I.I.B. being informed.
- .4 the Chairman and the I.O. then collect and collate the necessary evidence which is used, with the assistance and participation of the Chief Surveyor's department, to prepare an Investigation Report, signed by the I.O. and countersigned by the Chairman and Chief Surveyor.

5.21 SUGGESTIONS FOR A PRELIMINARY INVESTIGATION

The I.O. must have power to enter any premises, or board any vessel and examine her and the equipment, interview witnesses, take statements, collect, examine, and or make copies of papers, books, records, and documents; he may tape evidence, take photographs, remove and mark any original documents or objects for future identification. The complete development of all relevant facts in order to establish the cause of the casualty must be ensured.

5.22 The following chart, (Annex 7), devised by Prof. Colucciello (2A) offers a good guideline on where to start, how to proceed, conclude, and to use the results of casualty safety investigation.

5.23 The I.O. must be on the scene of the casualty early in order to question witnesses and collect evidence as soon as possible. If the casualty is in foreign waters, the Minister must ensure, through diplomatic circles, the assistance of the foreign government investigators and other officials such as immigration, customs, etc. The Classification Society of the vessel must also be asked for the co-operation of their surveyors with the I.O.

5.24 WITNESSES

These are to be officially invited, verbally, by telephone, or in writing, to an interview and examined, if necessary, on oath administered by the I.O.. An attorney to advise the witness, if the latter so requests, is to be allowed. The former is not to be permitted to approve or ask questions or make statements. Let the witness narrate his knowledge of the occurrence, ask him questions (which he must be obliged to answer), and from the notes taken, construct a written summary which the witness may sign after any agreed amendments have been made. Written and signed statements may also be accepted from witnesses, but if invited to attend an interview, they must do so.

5.25 Other interested parties, except if necessary members of the I.I.B., should not be allowed at this interview. The I.O. may exclude the owner or his representative also when deemed necessary. The opinion of the witness must be obtained in confidence on this point beforehand. The presence, without participation, of other parties is to be considered, with attention paid to any international conventions to which Ghana may be a party.

5.26 Statements should be obtained from the master or most senior surviving officer, the officer on watch at time of accident, the Chief (or most senior surviving) Engineer, the engineer on watch, the helmsman, lookout, or any other important witness to the casualty. Persons off duty may have pertinent information for example in cases of alcohol or drug abuse. Determine the main issues involved to enable the search for facts needed to explain the circumstances of the accident.

5.27 For the purpose of making positive contributions to the investigation, direct access to the investigator should be given to the representatives of the owners, operators, repairers, ship and equipment builders involved in the accident so they can examine the components for which they are responsible. Statements may be obtained from these, as from other witnesses, with the knowledge that such a statement may not be used by the Ministry in a criminal proceeding against the witness who made it except in the case of a false one deliberately made. It may be so used against others. The witness must be thus informed. He must be entitled to reasonable expenses.

5.28 FACTS TO BE COLLECTED

The following aspects of the information provided on the Casualty Report Form must be carefully delved into:

- .1 Navigation history including diagrams and sketches by officers of their recollection of the relevant situations, charts, recorder traces, fixes, or observations by visual bearings, loran, decca, satellite, etc. also echo soundings, and location of debris on the channel bottom.

- .2 Manoeuvres, helm orders, engine movements, anchors used;
- .3 Communications on own ship and with other stations;
- .4 Environmental effects, bank cushion/suction, squatting, wind and windage, sea, (look out for loss of stability in quarterly seas), current, tide, visibility, etc.;
- .5 Personnel, training, experience, state of rest, health and sobriety. If practicable, collect urine and blood samples for analysis. Witness may be examined medically, the results, while being treated confidentially, are compared with known standards to determine fitness for the duty on hand;
- .6 Photographs to be taken freely of damage, bridge layout and positions of officers, lookout, and pilot (if any); engine control room, manoeuvring platform, stations kept by engine room personnel at time of accident, position of telegraph and other engine controls, etc.. Remember condition may be altered by salvors, rescue team, divers, sightseers, etc.;
- .7 In case of loss of life, how it was caused; this may require an autopsy; it is known that the fluid in the eyeball is the least contaminated in a corpse;

- .8 Defects in the hull, machinery or equipment of the vessel which may have led to or contributed to the casualty;
- .9 Stability of the vessel as compared to statutory/international requirements;
- .10 Where the stability of the vessel is in question, e.g. in case of capsizing, a full examination should be undertaken, using the services of a Naval Architect or the Classification Society if necessary, the Lines Drawing and the Loading Manual being made available. Points to be carefully looked at must include:
 - .10.1 loading of each compartment (weight and Kg);
 - .10.2 for liquid cargoes, specific gravity, viscosity, free surface effect;
 - .10.3 stowage factor, suspended weights with evidence from the previous ports of call if necessary;
 - .10.4 statical and dynamic stability, righting levers, maximum GZ and angle at which it occurred;
 - .10.5 any alterations to the hull, machinery, stores, etc. that may have changed the light displacement and KG.

- .10.6 state of valves in pipes connecting compartments, an open valve being capable of admitting fluid through a broken pipe into an otherwise intact compartment;
- .10.7 clear scuppers and freeing ports to allow escape of water from deck;
- .10.8 height, direction, and period of seas, remembering the dangers of synchronous rolling or pitching, and that certain quarterly seas can reduce stability.
- .11 if pollution occurred, its extent, nature, and how it was caused;
- .12 adequacy and condition of Life Saving Appliances and Fire Fighting Appliances as appropriate;
- .13 the operation and efficacy of the ship's radio equipment and navigational aids;
- .14 the nature of the damage suffered as a result of the casualty;
- .15 details of any acts of gallantry;
- .16 rescue services rendered by other ships or any other help given to the ship or the survivors;
- .17 maximum use should be made of visual or other evidence; these may confirm or conflict with statements by witnesses, some of whom may be more inclined to tell the investigator what they

think he might want to hear, or what they have agreed beforehand among themselves to say, possibly concealing certain evidence, all out of natural tendencies. Such vigilance may also lead to the exposure of a condition or action not at first recalled by witnesses.

- .18 With regard to the needed vigilance in observing and recording evidence, the use of modern electronic technology in detecting and recording data can be of tremendous help in casualty investigation. The benefits of such a data recorder ("Black Box"), a device which records (and possibly transmits regularly to the company Headquarters) all the important data on the position and navigation of the ship, environmental conditions and their effects, engine performance, cargo distribution, stresses, stability, communications, etc., etc., are enormous. Such a box, working within prescribed and acceptable limits of accuracy, will undoubtedly be a most valuable source of reliable information. This author therefore strongly supports the current efforts being made to ensure mandatory installation of the "Black Box" on vessels.

- .19 Data from such a device may be most conveniently used on a simulator by a competent operator to demonstrate almost exactly when, where, how, and to a large extent why the accident happened. In other words, the simulator may be used to prove the consistency of the facts and data gathered during the investigation.

This would be a far better way than the present practice of relying on human memory (which may have faded or been affected by other such human factors as prejudice, ignorance, loyalty, fear, state of health, etc.). Hand filled documents may also have been doctored or prepared with data, which for various reasons, may not be quite correct.

- .20 Analysis of data received from such a data recorder may provide invaluable information for writing of programmes and courses for ship handling simulators used in training mariners. This type of work, geared particularly towards ship handling in emergency situations, is going on at the University of Wales, Institute of Science and Technology, U.K.(5).

5.29 COMPLIANCE WITH STATUTORY REQUIREMENTS

When collecting facts, the I.O. must be on the lookout for such irregularities as:

- .1 contravention of the Collision Regulations;
- .2 overloading of vessel;
- .3 improper stowage and securing of cargo;
- .4 lack of or expired certificates relating to vessel or crew including inadequate manning;

- .5 poor or improper maintenance of equipment;
- .6 absence of required equipment and or necessary publications such as charts, pilots, manuals;
- .7 requisite drills not held;
- .8 misconduct, including drug or alcohol abuse, endangering the vessel, equipment, or persons on board;
- .9 non-compliance with advice in Notices to Mariners, Navigation Warnings, Merchant Shipping Notices, Codes of Practice, etc.

5.30 Upon discovery of contravention of any statutory regulation, the witness must be warned, for example, in the following words:

- .1 "As a result of evidence I have obtained during the course of my inquiry or your statement, I have formed the opinion that an offence may have been committed. (Give details of presumed offence). Although I am concerned solely with ascertaining the facts of the casualty and obtaining evidence for use during a possible subsequent formal investigation, it is my duty to pass on this opinion to the Ministry. If the Minister decides that there is enough evidence for criminal proceedings, a separate investigation for that particular offence will be undertaken by someone other than me".

The comments of the witness must be recorded and reported

with the fact that the above warning was given.

5.31 The I.O. should then immediately make a separate report outlining the facts and submitting supporting evidence of the apparent breach of the rules and present same to the Chief Surveyor, copy to the Chairman, I.I.B.

5.32 The Ministry of Justice should then be contacted to investigate and prosecute criminal offences while the Ministry of Transport and the I.I.B. handle disciplinary proceedings such as would involve suspension or cancellation of certificates, warning or reprimanding of offenders.

5.33 ANALYSIS

This consists of selecting the relevant facts, thoroughly examining them, comparing the results with current international and national regulations, standards and established practices. The aspects to be analysed include, but are not limited to:

- .1 the quality or weight of evidence taken;
- .2 technical aspects such as failure of equipment from latent defect, poor workmanship, etc.;
- .3 other technical factors e.g. Bernouilli effect, squat, bank effect, etc.;
- .4 human aspects as willingness and ability to communicate, fatigue, knowledge, skills, experience, etc.;

- .5 determination from the evidence of the most probable sequence of events and thus the cause or causes of the accident.

5.34 In this regard, it is strongly suggested that provision be made at the Regional Maritime Academy for a short course training programme for prospective investigators on, among others, the following topics:

- .1 interview techniques;
- .2 legal rights of witnesses;
- .3 administering oaths;
- .4 investigative photography;
- .5 safety standards - IMO, National, Classification Society, Professional Society;
- .6 taking and interpreting information from films, photographs, recorder traces, etc.;
- .7 where possible and practicable, use of the simulator in resolving some of the issues raised by the casualty.

Seminars and symposia may also be organized and senior investigators be encouraged to attend international conferences on the topic.

5.35 The Investigating Board must write to notify the Minister and any other relevant person of any recommendation, interim or final, that requires urgent

action. The Minister must be obliged to publicly inform the Board (within three months, say) of any action taken, proposed to be taken or why action to be taken may differ from that recommended, or why no action need be taken.

5.36 FORMAL (JUDICIAL) INVESTIGATION

Where the Chief Surveyor and the Chairman of the I.I.B. are agreed that as a result of the complexity, seriousness public interest, or any other overbearing cause, a formal investigation (F.I.) would be more effective in resolving the issues raised by the casualty, they shall so advise the Minister who may ask for one by a Wreck Commissioner appointed by the Chief Justice (Sec. 268) and held as specified in Sec. 261. (See Annex 4A). The Minister may submit a number of pertinent questions to be answered. He may vary this number at any time.

5.37 DISCIPLINARY INVESTIGATION

Where evidence exists that may lead to the suspension or cancellation of the certificate of a master, mate, or engineer, a Disciplinary Board, consisting of the Chief Surveyor, the Chairman of the I.I.B. and two assessors, with at least one from the field of experience of the officer whose certificate is involved, shall consider the case as specified under Sections 261 to 266 (See Annex 4A, B) thus obviating the need for a Wreck Commissioner. The hearing should be held in public, the officer concerned being allowed a counsel if he so desires.

5.38 It is anticipated that the combination of Preliminary and Disciplinary Investigations should

adequately cater for the safety aspects of almost all casualties, the need for a F.I. for this purpose arising only very rarely. The Boards may reconsider their findings and recommendations at any time; they must do so when in their opinion, new facts appear.

5.39 THE PRELIMINARY INVESTIGATION REPORT

It is not necessary to delay submission of the report until all possible lines of inquiry have been exhausted. Soon after the cause of the casualty has been reasonably clearly established, the report should be issued with the summary indicating that more would follow in supplements.

5.40 If after a period of investigation as per the I.O's terms of reference there is insufficient evidence to lead to a clear conclusion, this must be stated. In case of unavoidable delay, e.g. absence of a key witness, an interim report may be issued indicating progress made, views so far formed, reasons for the delay, etc.

5.41 PARTS OF THE REPORT

The report may be divided into the following parts:

- .1 Introduction;
- .2 Summary;
- .3 Findings of Facts;
- .4 Comments and Conclusions;

.5 Recommendations;

.6 Appendices.

5.42 INTRODUCTION

A brief statement of the facts of the casualty in some fifteen lines or so, avoiding any details, followed by a short paragraph on the authority behind the investigation, citing the enabling legislation and letter of appointment. The particulars of the vessel should be provided as a single page annex to be referred to here.

5.43 SUMMARY

This should provide a short (some 300 words, say) resume of the sequence of events, the investigator's conclusions as to the reason for the casualty and his recommended actions aimed at improving safety, thus giving a bird's eye view of the whole investigation.

5.44 FINDINGS OF FACT

These must constitute the main part of the report. Relate the events leading up to the accident in chronological order by reference to statements and other direct evidence from witnesses. Brief quotations from the statements may be included in the report but not full transcripts. The latter should however be submitted with the report.

5.45 Stick to the facts, not to interpretations, opinions, or conclusions. For example, if evidence clearly

points to breaches of the law, the report should only describe defects, omissions, etc. without saying whether or not they were in breach of the law. The statutory requirements may be included as statements of fact though.

5.46 Information on the following points should also be included:

- .1 background of the vessel, her officers and crew, owner and or operator, equipment, cargo, voyage, weather, relevant operational arrangements and procedures;
- .2 sequence of events following the accident, e.g. Search and Rescue;
- .3 other relevant circumstances and events.

5.47 CONCLUSIONS AND COMMENTS.

The Investigating Officer should here make his conclusions and comments, based on the Findings of Facts, on such aspects of the casualty as follows:

- .1 cause or causes, proximate and remote, of the casualty;
- .2 measures which might have prevented the accident;
- .3 reliability of witnesses or other evidence;
- .4 significant behaviour and attitude of individuals;

- .5 discussion on the sequence of events and other related matters, e.g. execution of emergency orders, Search and Rescue, etc.;
- .6 apparent breaches of the Merchant Shipping Act.

5.48 RECOMMENDATIONS

This part of the report, based on the Findings of Fact, Conclusions, and Comments, should contain:

- .1 recommendations on any action necessary to prevent a recurrence;
- .2 whether or not to hold a Formal Investigation;
- .3 whether or not to hold a Disciplinary Investigation into the conduct of any certificated officer;
- .4 any technical advice on compliance with traditional requirements, citing reference material in support;
- .5 recommendations on making any optional requirements mandatory.

5.49 APPENDICES

These should include, as appropriate:

- .1 particulars of the vessel;
- .2 plans of the vessel and relevant equipment, diagrams, records of equipment, statutory certificates, relevant charts, log extracts, cargo details, crew and passenger lists;
- .3 reports on the weather, distress traffic, search and rescue, etc.;
- .4 written and or signed statements;
- .5 photographs and press cuttings;
- .6 others as deemed necessary.

Appendix 1 should be the list of all remaining others.

5.50 As soon as the draft report is ready, it must be shown to the Minister and those parties directly affected by the conclusions and recommendations. Their views and comments, submitted within a specified time, a month say, must be considered and if appropriate, referred to in the final report.

5.51 SUBMISSION OF THE REPORT

The final report, in triplicate, signed by the Investigating Officer, is submitted to the Chief Surveyor and the Chairman of the I.I.B. both of who countersign and

submit one copy to the Minister. The Shipping Department may then make copies for public release. The Minister forwards the recommendations to be implemented to the appropriate authorities and informs the relevant organizations, e.g. IMO.

CHAPTER SIX

6 SUMMARY AND CONCLUSION

6.1 OBLIGATIONS AND BENEFITS

The obligation of flag states to investigate accidents caused to or by their ships for the purpose of ascertaining what caused them and then taking precautions to prevent a recurrence is self evident. The IMO, in a number of conventions, resolutions and circulars has laid down guidelines strengthening this obligation and asking for the dissemination of any lessons learned among the international maritime community by returning the following documents to its headquarters in London:

- .1 Maritime Casualty Report Form (MSC CIRC. 433) or
- .2 Fire Casualty Record (MSC CIRC. 388) or
- .3 Intact Stability Casualty Record (MSC CIRC. 224)
or
- .4 Questionnaire on Maritime Distress Systems
(COM/CIRC. 70)

Entries on these forms must be based on a Preliminary or Formal Investigation, a copy or extract of which must accompany the report. The International Labour Organization also has similar investigating and reporting requirements.

6.2 Other aspects of shipping such as Civil Liability and Compensation, Intervention to prevent or minimize damage to property and or the environment threatened by a maritime casualty, and Limitation of Liability following a shipping accident, have all benefited from Casualty Investigation, the cases of the "Torrey Canyon" and the "Amoco Cadiz" being pertinent examples.

6.3 The need for internationally accepted standards of training for watchkeepers was given recognition in the STCW Convention following statistical evidence that some 75 per cent of casualties are attributable to human factors.

6.4 TYPES OF CASUALTIES AND INVESTIGATIONS

Collisions, groundings, foundering, fires, explosions, chemical or oil spills, personal injuries, loss of life, equipment or cargo damage, constitute the main body of casualties requiring some form of the following investigations:

- .1 a safety investigation for improvement in the operation, equipment, rules and regulations;
- .2 a disciplinary investigation for personnel performance enhancement;
- .3 a criminal investigation for punishment of criminal behaviour;
- .4 a civil liability investigation for settling inter personal disputes usually of financial liability.

This work has concentrated on the safety and disciplinary aspects of casualty investigation procedures with emphasis on how the conflicting needs of regulation and fact finding are met in a number of different countries.

6.5 PROCEDURE IN VARIOUS COUNTRIES

The United States, with its vast resources, uses the Coast Guard for regulatory, fact finding and disciplinary requirements. The Marine Accident Division of the National Transportation Safety Board, having no regulatory functions, gives, by working with the Coast Guard, a good measure of assurance of a fair and unbiased investigation. Thanks to a Memorandum of Understanding with guidelines on co-operation, a happy working balance seems to have been struck between the two agencies.

6.6 Canada is currently debating a new law that will group safety casualty investigation in all modes of transportation under one umbrella, independent of the regulatory bodies.

6.7 In Liberia, the Marine Safety Department of the Bureau of Maritime Affairs effectively combines the fact finding, regulatory, and disciplinary activities along lines similar to the USCG. Officers of the Inspection and Investigation Division conduct the Preliminary Investigation, reporting to the Deputy Commander or the Commander of the Bureau, who decides whether or not to hold a Formal Investigation, depending on the facts and needs of the case. The F.I. report is always published and the P.I. report is also frequently published. For major accidents, the Commissioner may appoint a Marine

Board of Investigation organized and supervised by the Legal Department and the Investigation Division of the Bureau.

6.8 Surveyors of the Department of Transport in the United Kingdom are appointed, and empowered as Inspectors, by the Secretary of State to conduct a Preliminary Investigation into a reported accident. The recommendations of this P.I. report are carefully considered by senior officers of the Department of Transport and if necessary a Formal Investigation, generally conducted in public by a judge assisted by assessors, is held. In case of major accidents, the P.I. simply forms the fact finding phase of the total investigation.

6.9 A move is now on to appoint full time permanent Inspectors, independent of the regulatory division, to conduct investigations free of the accusation of conflict of interests. A P.I. report is normally not published, but that of a F.I. is published for public attention.

6.10 In the Netherlands, the Casualty Investigation Division of the Ministry of Transport has two full time officers. When an accident is reported, one or more surveyors of the Regulatory Division are appointed to look for the facts and prepare P.I. report which is submitted to the head of the Casualty Investigation Division, who, after a careful study, decides which case, depending on its seriousness or importance of the lessons involved, to investigate further using the Shipping Court, with which he makes the final decision.

6.11 This Court, chaired by a judge who is assisted by two fulltime members with marine experience and two to four temporary members with expert experience necessary for the case in hand, hears the case largely in public. The Casualty Investigation Division presents the facts and those principally involved are called upon to defend themselves.

6.12 The Court retires and returns with a decision or, after some weeks, writes one. It also handles disciplinary matters. Its function enhances, to a fair measure, the chance of impartiality. After its decision, only the Crown may grant clemency.

6.13 Though the Merchant Shipping Act, 1963 of Ghana provides for regulations to be made for casualty investigation, there appears to be a lack of simple but adequate guidelines and organization to carry out the necessary investigation of marine accidents. As a result, some serious casualties have not received the required attention and the lessons they offered might well have been lost except to the very few most intimately affected persons.

6.14 CONCLUSION

The proposal for the establishment of an Independent Investigation Board is therefore meant, among other reasons, to ensure a prompt and effective, just and open safety and disciplinary investigation of marine casualties in Ghana.

Table I: Major crude oil carrier casualties 1979–1980

LIBERIAN TANKER OR OBO	YEAR BUILT	DEADWEIGHT/ TYPE	INERT GAS SYSTEM	INERTED	CASUALTY
<i>Seatiger</i>	1974	123 692 Crude oil carrier	Yes	No	Hit by lightning while ballasting at Sun Oil Terminal, Nederland, Texas on 19 April 1979. CTL.
<i>Aegean Captain</i>	1968	210 257 VLCC	Yes	Yes	Collided with <i>Atlantic Express</i> off Tobago on 19 July 1979. Fire contained; returned to port. CTL.
<i>Berge Vanga</i>	1974	227 912 OBO	Yes	No	Sank without survivors in the South Atlantic on 29 October 1979. Had a cargo of ore; carried crude on last voyage.
<i>Energy Determination</i>	1976	321 186 ULCC	Yes	No	Explosions and fire in cargo tanks on a ballast voyage in the Strait of Hormuz on 13 December 1979. After section sank. CTL.
<i>Albahaa B</i>	1971	239 410 VLCC	No	No	Explosions and fire in cargo tanks while tank cleaning off the East Coast of Africa on 3 April 1980. Sank.
<i>Mycene</i>	1976	238 889 VLCC	Yes	No	Explosions and fire in cargo tanks while tank cleaning off the West Coast of Africa on 3 April 1980. Sank.
<i>Energy Concentration</i>	1970	216 269 VLCC	Yes	Yes	Hogged and broke amidships during discharge at Rotterdam on 22 July 1980. Exceeded permissible bending moment. No fire; no explosion; no injuries. CTL.

MARINE SAFETY MANUAL

SAMPLE NOTIFICATION CHECKOFF LIST FOR
SIGNIFICANT, MAJOR MARINE, AND PUBLIC/NONPUBLIC VESSEL CASUALTIES

DATE _____

TIME _____

REPORTING OFFICE _____

PERSON REPORTING _____

VESSEL DATA:

Name(s):

O.N.:

Nationality:

Gross Tonnage:

Length:

Year Built:

Homeport:

Owner/Agent: _____

DATE/TIME OF CASUALTY:

LOCATION:

LOSS OF LIFE/INJURIES:

APPROXIMATE DAMAGE:

POLLUTION OR POTENTIAL POLLUTION:

NATURE OF CASUALTY (CAUSES IF KNOWN):

COURSE OF ACTION:

ROUTINE _____

FORMAL _____

RECOMMEND MARINE BOARD _____

LIBERIAN FLAG VESSELS LOST THRU CASUALTY SUMMARY

	<u>LOSSES</u>	<u>TONS GROSS</u> <u>(1,000 TONS)</u>	<u>LOSS AS A</u> <u>PER CENT</u> <u>OF R.L. FLEET</u> (By tonnage)	<u>WORLD TOTAL</u> <u>LOSS PER CENT</u> <u>OF WORLD FLEETS</u> (By tonnage)	<u>RATIO OF R.I</u> <u>TO WORLD LOS</u> (By tonnage)
1967	25	213	.94	.46	2.04
1968	18	167	.65	.39	1.67
1969	16	136	.46	.39	1.18
1970	12	96	.29	.27	1.07
1971	21	195	.51	.42	1.21
1972	20	202	.45	.35	1.29
1973	17	282	.56	.32	1.75
1974	10	105	.19	.28	0.67
1975	16	249	.38	.29	1.31
1976	17	353	.48	.31	1.54
1977	12	292	.36	.27	1.33
1978	8	206	.26	.42	0.62
1979	16	694	.85	.54	1.57
1980	12	517	.64	.43	1.49
1981	7	139	.19	.29	0.66
1982	6	212	.30	.38	0.79
1983	7	174	.26	.35	0.74
1984	10	424	.73	.57	1.29
1985	6	107	.20	.41	0.49
1986	7	850	1.66	.65	2.55
1987	3	108	.22	.32	0.69
1988(Est.)	5	446	.90	NA	NA

Notes:

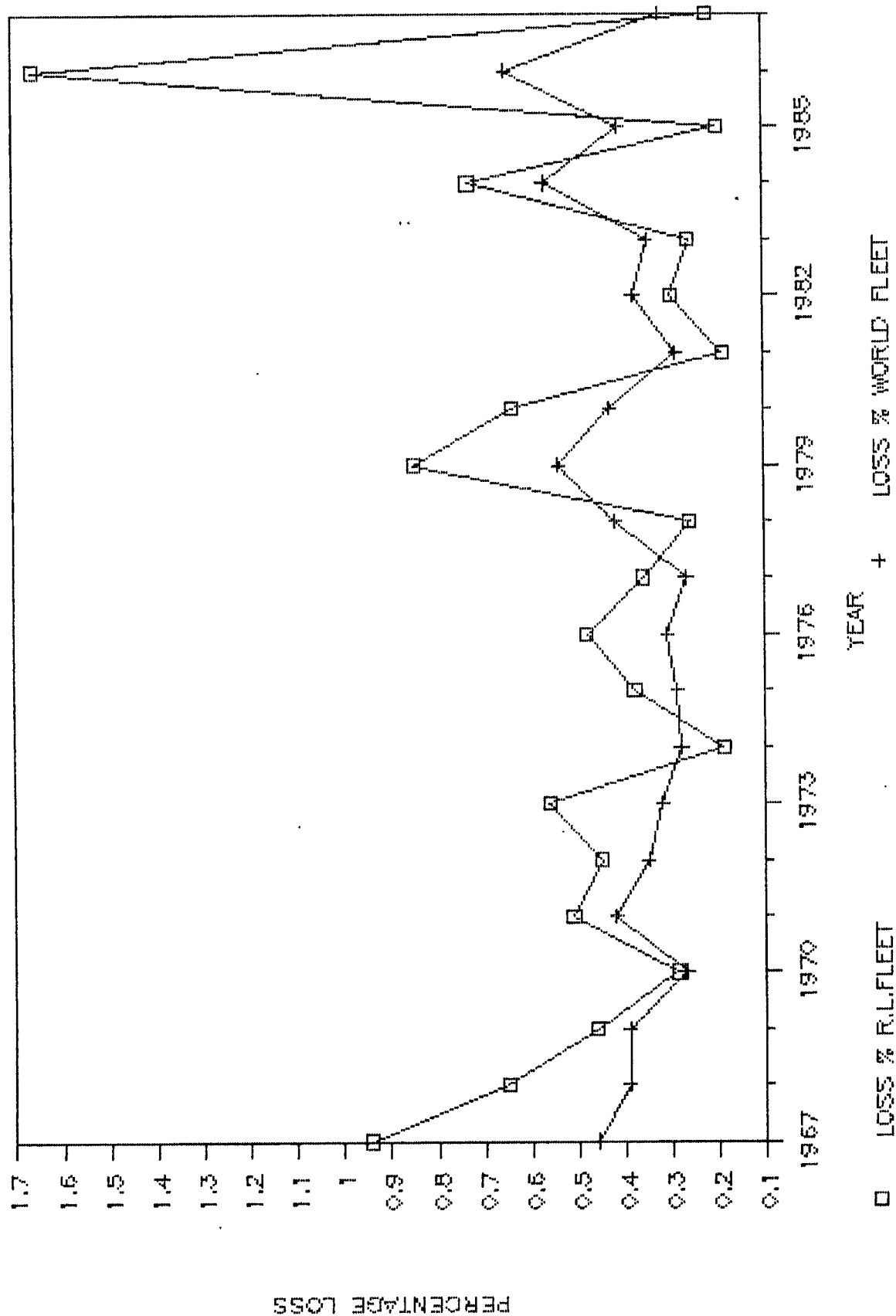
Source for data 1967-1987 is Lloyd's Register of Shipping/Casualty Annual Returns

War loss accounted for 47% of the 1982 total Liberian tonnage loss.(Falklands)
 War loss accounted for 09% of the 1983 total Liberian tonnage loss.(Gulf)
 War loss accounted for 57% of the 1984 total Liberian tonnage loss.(Gulf)
 War loss accounted for 24% of the 1985 total Liberian tonnage loss.(Gulf)
 War loss accounted for 99% of the 1986 total Liberian tonnage loss.(Gulf)
 War loss accounted for 57% of the 1987 total Liberian tonnage loss.(Gulf)
 War loss accounted for 84% of the 1988 total Liberian tonnage loss.(Gulf) (Rev)

WAC:jp (Rev)
 6 June 1989

Annex 3A

FLEET LOSSES WORLD/LIBERIAN 1969/1987



PART VI—SHIPPING INQUIRIES AND COURTS

*Inquiries and Investigations*Shipping
casualties.

259. For the purpose of inquiries and investigations under this Part of this Act a shipping casualty shall be deemed to occur,

- (a) when on or near the coasts of Ghana any ship is stranded, lost, abandoned or damaged or where any loss of life occurs by reason of any casualty happening to or on board any ship;
- (b) when in any place such casualty occurs to a ship registered in Ghana and any witness is found in Ghana;
- (c) when any ship registered in Ghana is lost or is supposed to have been lost and evidence is obtainable in Ghana as to the circumstances under which she proceeded to sea or was last heard of.

Preliminary
inquiry.

260. (1) Where a shipping casualty has occurred a preliminary inquiry may be held respecting the casualty by a receiver of wreck, a surveyor of ships or by any person appointed for the purpose by the Minister.

(2) For the purpose of any such inquiry the person holding the same shall have the powers of a surveyor of ships under this Act.

Formal in-
vestigation.

261. (1) A person authorised to make a preliminary inquiry shall, where the Minister so directs, apply to a court of summary jurisdiction to hold a formal investigation, and that Court shall thereupon hold the formal investigation.

(2) A wreck commissioner appointed under this Act shall, at the request of the Minister hold any formal investigation into a shipping casualty under this section, and any reference to the Court holding an investigation under this section shall include a wreck commissioner holding such an investigation.

(3) The Court holding any formal investigation shall hold the same with the assistance of one or more assessors of nautical, engineering or other special skill or knowledge to be appointed as occasion demands by the Minister.

(4) Where a formal investigation involves or appears likely to involve any question as to the cancellation or suspension of the certificate of a master, mate or engineer, the Court shall hold the investigation with the assistance of not less than two assessors having experience in the merchant service.

(5) It shall be the duty of the person who has applied to a Court to hold a formal investigation to superintend the management of the case, and to render such assistance to the Court as lies in his power to render.

(6) The Court after hearing the case shall make a report to the Minister containing a full statement of the case and of the opinion of the Court thereon, accompanied by such report of, or extracts from, the evidence, and such observations as the Court thinks fit.

(7) Each assessor shall either sign the report or state in writing to the Minister his dissent therefrom and the reasons for the dissent.

(8) The Court may make such order as the Court thinks fit respecting the costs of the investigation, or any part thereof, and any such order shall be enforced by the Court as if it were an order for costs made by a District Magistrate.

(9) The Minister may, if in any case he thinks fit so to do, pay the costs of any formal investigation.

(10) For the purposes of this section, the Court holding a formal investigation shall have all the powers of a court of summary jurisdiction when acting as a court in exercise of its ordinary jurisdiction.

(11) Every formal investigation into a shipping casualty shall be conducted in such a manner that, if a charge is made against any person, that person shall have an opportunity of making a defence.

(12) Formal investigations into shipping casualties under this section shall not be held, unless no other suitable place is, in the opinion of the Minister available, in a court ordinarily used as a court of criminal jurisdiction and all enactments relating to the

court shall for the purposes of the investigation have effect as if the place at which the court is held were a place appointed for the exercise of the ordinary jurisdiction of the court.

Application
to Common-
wealth
countries.

262. An investigation or rehearing into the occurring of a shipping casualty shall not be held under this Part of this Act into any matter that has once been the subject of an investigation or inquiry and has been reported on by a competent court or tribunal in any Commonwealth country.

Power as to Certificates of Officers, etc.

Power of
Court as to
certificates.

263. (1) The certificate of a master, mate or engineer may be cancelled or suspended by a Court holding a formal investigation into a shipping casualty under this Part of this Act, if the Court finds that the loss or abandonment of, or serious damage to, any ship, or loss of life has been caused by his wrongful act or default:

Provided that one at least of the assessors concurs in the finding of the Court.

(2) Where any case before the Court involves a question as to the cancellation or suspension of a certificate, the Court shall, at the conclusion of the case or as soon afterwards as possible, state in open Court the decision to which they have come with respect to the cancellation or suspension.

(3) The Court shall, in all cases, send a full report of the case with the evidence to the Minister, and shall also, if they determine to cancel or suspend any certificate, send the certificate to the Minister with its report.

(4) A certificate shall not be cancelled or suspended by a Court under this section, unless a statement of the case on which the investigation has been ordered, has been furnished before the commencement of the investigation to the holder of the certificate.

Limitation
of powers
as to
certificate.

264. Any Court holding a formal investigation pursuant to the provisions of this Part of this Act may cancel or suspend a certificate of competency or service so far only as regards a certificate which has been issued in Ghana whether or not the holder thereof is a citizen of Ghana.

Delivery of
certificate.

265. A master, mate or engineer whose certificate is cancelled or suspended by a Court shall deliver his certificate to that Court on demand and if he fails to comply with this section, he shall be liable to a fine not exceeding fifty pounds.

Power of
Minister to
restore
certificate.

266. The Minister may, if he thinks that the justice of the case requires it, re-issue and return the certificate of a master, mate or engineer which has been cancelled or suspended, whether in Ghana or elsewhere or shorten the time for which it is suspended, or grant in place thereof a certificate of the same or any lower grade.

Miscellaneous

267. (1) The Minister may, in any case where under this Part of this Act a formal investigation into a shipping casualty has been held, order the case to be reheard either generally or as to any part thereof, Rehearing of investigations.

- (a) if new evidence which could not be produced at the investigation has been discovered; or
- (b) if for any other reason there is in his opinion ground for suspecting that there has been a miscarriage of justice.

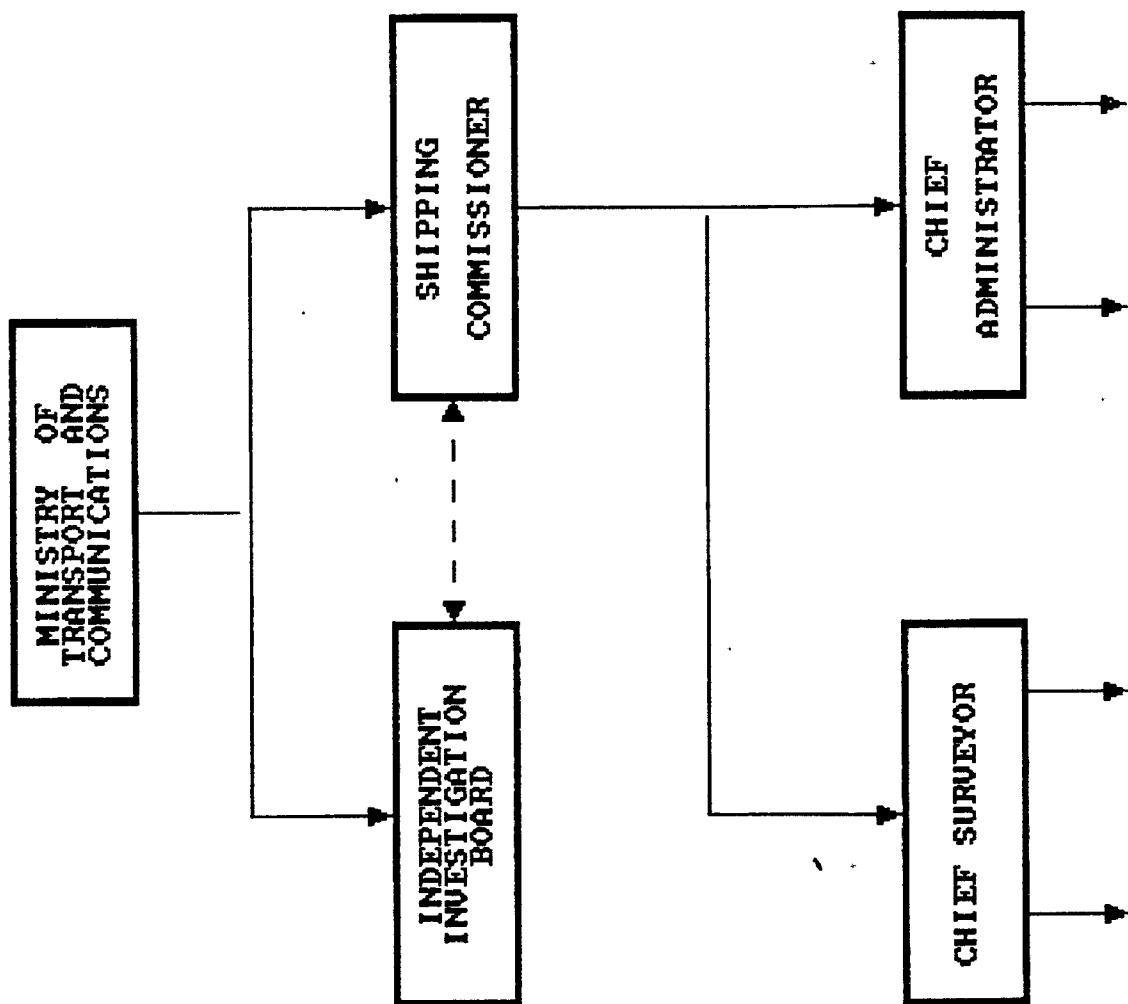
(2) The Minister may order the case to be reheard by the Court by whom the case was heard in the first instance or by the High Court.

(3) Where on any investigation a decision has been given with respect to the cancellation or suspension of the certificate of a master, mate or engineer and an application for a rehearing under this section has not been made or has been refused, an appeal shall lie from the decision to the High Court.

(4) The owner of the ship, or any other person who, having an interest in the investigation, has appeared at the hearing and is affected by the decision of the Court, may appeal from that decision in the same manner and subject to the same conditions in and subject to which a master may appeal under this section against a decision with respect to the cancellation or suspension of his certificate.

268. The Chief Justice may appoint some fit person to be a wreck commissioner for the Republic and may remove any such wreck commissioner. Appointment of wreck commissioners.

269. The Minister may in consultation with the Chief Justice, by legislative instrument, and with the approval of the Minister responsible for Finance, so far as relates to fees, make Rules for carrying into effect the provisions relating to formal investigations and to the rehearing of, or an appeal from, any investigation held under this Part of this Act; and in particular with respect to the appointment and summoning of assessors, the procedure, the parties, the persons allowed to appear, the notice to those parties or persons or to persons affected, the amount and application of fees, and the place in which formal investigations are to be held. Rules as to investigations.



ANNEX 5 PART OF SUGGESTED ORGANIZATION.

I. PARTICULARS OF VESSEL

1. Name of Vessel	2. Official Number	3. Year Built	4. Gross Tonnage	5. Net Tonnage
6. Type of Vessel (See Note 1.)	7. Propulsion (See Note 2.)	8. Place Built		
9. Name of Owner		10. Name, Address and Telephone of Managing Agent		
11. (a) Name of Master or Person in Charge	(b) Citizenship	(c) Date of Birth	(d) License Grade and Date of Issue	

II. PARTICULARS OF CASUALTY

12. (a) Date of Casualty	(b) Time (Local or Zone)	(c) Zone Description	(d) Time of Day <input type="checkbox"/> Day <input type="checkbox"/> Night <input type="checkbox"/> Twilight	
13. Geographical Location of Casualty (See Note 3.)			14. Geographical Name of Body of Water	
15. (a) If Casualty occurred underway, Port of Departure		(b) Date of Departure	(c) Port to Which Bound	
16. (a) Nature of Cargo (Describe and give amounts in Long Tons)		(b) Amount Dry Cargo	(c) Amount Bulk Liquid	(d) Amount Deck Cargo
17. Speed in Knots Prior to Casualty	18. True Course Prior to Casualty	19. Draft Forward		20. Draft Aft
21. Atmospheric Conditions at Time of Casualty (Check one or more of the following) <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Fog <input type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/> Other (Specify)				
22. Distance of Visibility <input type="checkbox"/> Under 2 Miles <input type="checkbox"/> 2-5 Miles <input type="checkbox"/> Over 5 Miles	23. Wind <input type="checkbox"/> Light <input type="checkbox"/> Moderate to Fresh <input type="checkbox"/> Storm to Hurricane	24. Sea <input type="checkbox"/> Smooth to Slight <input type="checkbox"/> Moderate to Rough <input type="checkbox"/> High		25. Wind Direction 26. Direction of Sea 27. Direction of Swell
28. Navigation Equipment (Check one or more of the following): <input type="checkbox"/> Radar <input type="checkbox"/> Loran <input type="checkbox"/> Inoperative <input type="checkbox"/> Inoperative <input type="checkbox"/> Not Used <input type="checkbox"/> Not Used <input type="checkbox"/> Used <input type="checkbox"/> Used		29. Communications Equipment (Check one or more of the following): <input type="checkbox"/> Radiotelephone <input type="checkbox"/> CW (Key) <input type="checkbox"/> In Use with Other Vessels <input type="checkbox"/> In Use with Other Vessel <input type="checkbox"/> In Use with Shore Stations <input type="checkbox"/> In Use with Shore Station <input type="checkbox"/> Not Used <input type="checkbox"/> Not Used		
30. Auto Alarm Transmitted by your Vessel? <input type="checkbox"/> Yes <input type="checkbox"/> No		31. Rules of the Road Applicable at Time <input type="checkbox"/> International <input type="checkbox"/> Other (Specify)		

Note 1. Type of Vessel—General Cargo, Oil Tanker, Ore/Oil Carrier, Passenger, Bulk Carrier, Ore Carrier, Tug, etc.

Note 2. Propulsion—Steam Reciprocating, Steam Turbine, Turbo-Electric; Diesel, Diesel-Electric, etc.

Note 3. Location—If open sea, Latitude and Longitude, give distance to and name of nearest shore; if near coast give distance and true bearing to charted object; if in port, straits, river, channel, etc., give name.

NATURE OF THE CASUALTY (Check one or more of the following. Give pertinent details in Item 33.)	
COLLISION WITH OTHER VESSEL(S) Give Name and Flag of Other Vessels	EXPLOSION/FIRE (Other)
	GROUNDING
	FOUNDER (Sinking)
COLLISION WITH FLOATING OR SUBMERGED OBJECTS	CAPSIZEING WITHOUT SINKING
COLLISION WITH FIXED OBJECTS (Piers, bridges, etc.)	FLOODINGS, SWAMPING, ETC. WITHOUT SINKING
COLLISION WITH ICE	HEAVY WEATHER DAMAGE
COLLISION WITH AIDS TO NAVIGATION	CARGO DAMAGE (No vessel damage)
COLLISION (Other)	MATERIAL FAILURE (Vessel structure)
EXPLOSION/FIRE (Involving cargo)	MATERIAL FAILURE (Engineering machinery, including main propulsion, auxiliaries, boilers, evaporators, deck machinery, electrical, etc.)
EXPLOSION/FIRE (Involving vessel's fuel)	
FIRE (Vessel's structure or equipment)	EQUIPMENT FAILURE
EXPLOSION (Boiler and associated parts)	CASUALTY NOT NAMED ABOVE
EXPLOSION (Pressure vessels and compressed gas cylinders)	

33. DESCRIPTION OF CASUALTY (Events and circumstances leading to casualty and present when it occurred. Attach diagram and additional sheets, if necessary.)

34. Personnel				35. Property Losses		Dollars (U.S.A.)
(a) Number on Board	Crew	Passengers	Other	Total:	(a) Estimated loss/damage to vessel	\$
(b) Number Known Dead					(b) Estimated loss/damage to cargo	\$
(c) Number Missing					(c) Estimated loss/damage to other property	\$
(d) Number Injured					36. Is Vessel a Total Loss? <input type="checkbox"/> Yes <input type="checkbox"/> No	

37. Remarks (Indicate assistance rendered by shore stations and vessels; recommendations for corrective safety measures pertinent to this casualty; include explanation of any unsatisfactory lifesaving equipment. Attach additional sheets, if necessary.)

38. Deck Officer on Duty at Time of Casualty		39. Engineer on Duty at Time of Casualty	
Name		Name	
Capacity	License No.	Capacity	License No.
40. Date of Report	41. Submitted by (Print Name)	42. Signature	43. Title

I. PARTICULARS OF VESSEL

1. Name of Vessel		2. Official Number	3. Name, Address and Telephone of Managing Agent
4. Type of Vessel (See Note 1.)	5. Propulsion (See Note 2.)		
6. Name of Owner			

II. PARTICULARS OF PERSON INJURED, DECEASED OR MISSING (Believed dead)

7.(a) Name of Person		(b) Home Address	(c) Date of Birth
			(d) Citizenship
8. Seaman's Book or Passport No.		9. Status or Capacity on Vessel	
10. Activity Engaged in at Time of Casualty		11. If Crew Member or Shore Worker <input type="checkbox"/> On Watch <input type="checkbox"/> Working <input type="checkbox"/> Other	
12.(a) Name of Immediate Supervisor at Time of Casualty		(b) Supervisor's Capacity or Status on Vessel	

III. PARTICULARS OF CASUALTY OR ACCIDENT

13.(a) Date of Casualty	(b) Time (Local or Zone)	(c) Zone Description	(d) Time of Day <input type="checkbox"/> Day <input type="checkbox"/> Night <input type="checkbox"/> Twilight
14. Geographical Location of Vessel at Time of Casualty (See Note 3.)			15. Geographical Name of Body of Water
16.(a) If Casualty occurred underway, Port of Departure	(b) Date of Departure	(c) Port to Which Bound	
17.(a) RESULT OF CASUALTY: <input type="checkbox"/> Injury <input type="checkbox"/> Death <input type="checkbox"/> Missing (Complete INJURY or DEATH entries below, as appropriate)			
(b) Nature of Injury			(c) Total Days Incapacitated
(d) Reason for Death			(e) Location of Individual at Death
			(f) Date of Death

Note 1. Type of Vessel—General Cargo, Oil Tanker, Ore/Oil Carrier, Passenger, Bulk Carrier, Ore Carrier, Tug, etc.

Note 2. Propulsion—Steam Reciprocating, Steam Turbine, Turbo-Electric; Diesel, Diesel-Electric, etc.

Note 3. Location—If open sea, Latitude and Longitude; give distance to and name of nearest shore; if near coast give distance and true bearing to charted object; if in port, straits, river, channel, etc., give name.

DESCRIPTION OF CASUALTY (Give events leading up to casualty and how it occurred. Attach diagram & additional sheets, if necessary.)

19. WITNESSES TO ACCIDENT (At least two, if possible)

Name _____ Address _____	Name _____ Address _____
Name _____ Address _____	Name _____ Address _____

IV. ASSISTANCE AND RECOMMENDATIONS

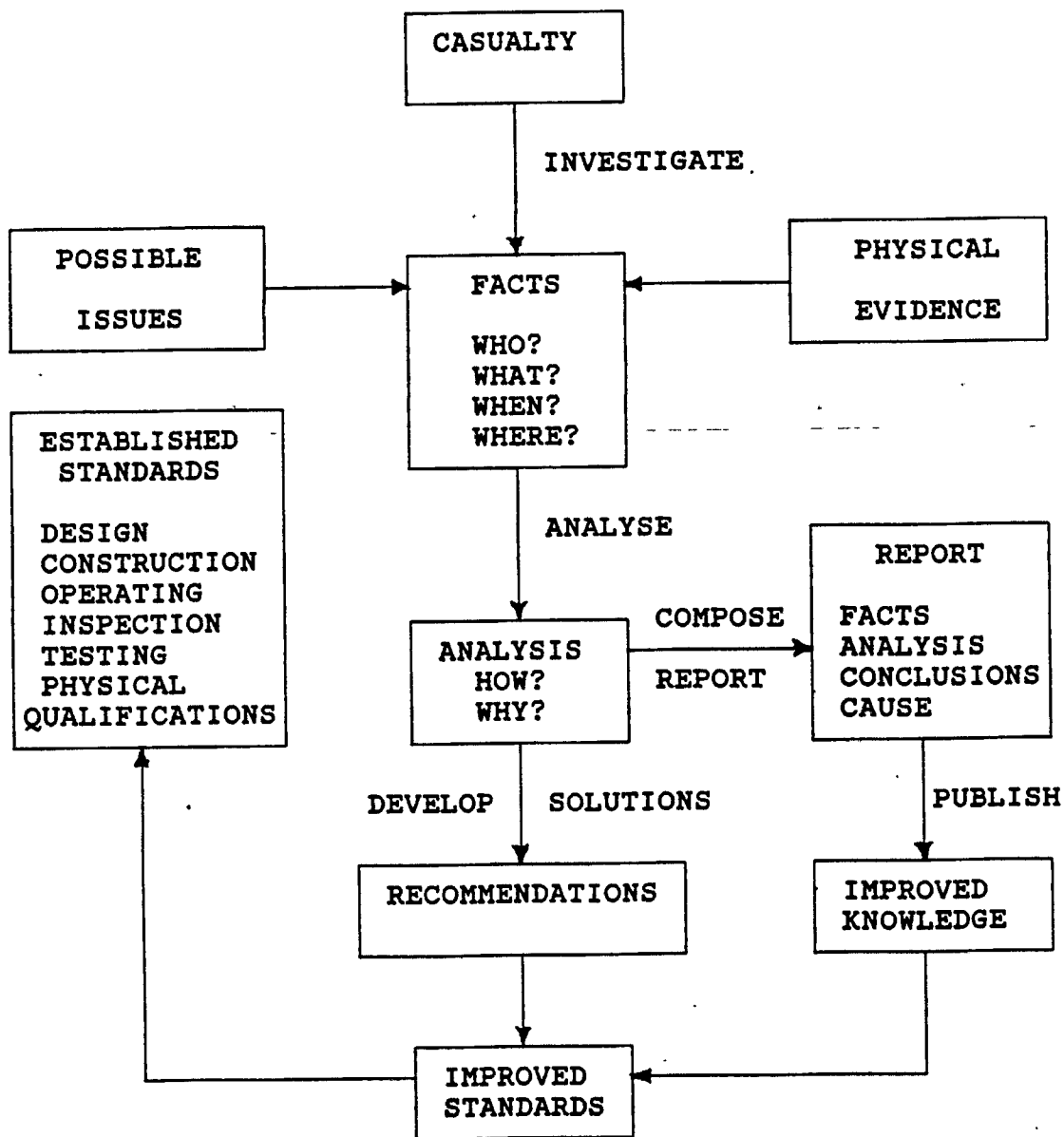
1.(a) MEDICO (Medical) MESSAGE SENT <input type="checkbox"/> Yes <input type="checkbox"/> No	(b) IF YES, GIVE DATE OF FIRST MESSAGE _____	(c) IF YES, GIVE TIME OF FIRST MESSAGE (Local or zone and description) _____
1.(a) TREATMENT ADMINISTERED <input type="checkbox"/> Yes <input type="checkbox"/> No,	(b) IF YES, BY WHOM: <input type="checkbox"/> SHIP'S DOCTOR <input type="checkbox"/> OTHER SHIP'S PERSONNEL <input type="checkbox"/> OTHER (Specify)	

2. BRIEFLY DESCRIBE TREATMENT (If administered by other than M. D.)

1.(a) Name of Hospital, if Person was Hospitalized _____	(b) Address of Hospital _____
---	----------------------------------

Recommendations for Corrective Safety Measures Pertinent to this Casualty

Date of Report	26. Submitted by (Print Name)	27. Signature	28. Title
----------------	-------------------------------	---------------	-----------



ANNEX 7 CASUALTY INVESTIGATION PROCESS.

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1989 No. 1172

MERCHANT SHIPPING

The Merchant Shipping (Accident Investigation) Regulations 1989

<i>Made</i> - - - -	6th July 1989
<i>Laid before Parliament</i>	14th July 1989
<i>Coming into force</i>	7th August 1989

The Secretary of State, in exercise of the powers conferred on him by sections 33 and 53 of the Merchant Shipping Act 1988(a) (hereinafter called "the Act"), and of all other powers enabling him in that behalf, hereby makes the following Regulations:—

Citation and Commencement

1. These Regulations may be cited as the Merchant Shipping (Accident Investigation) Regulations 1989 and shall come into force on 7th August 1989.

Interpretation

2.—(1) For the purposes of these Regulations and of section 33 of the Act, "accident" means any contingency whereby:—

- (a) there is loss of life or major injury to any person on board, or any person is lost from, a ship or a ship's boat; or
- (b) a ship is lost or presumed to be lost, or is abandoned or materially damaged; or
- (c) a ship strands or is in collision; or
- (d) a ship is disabled; or
- (e) any material damage is caused by a ship.

(2) In these Regulations

"Chief Inspector" means the Chief Inspector of Marine Accidents appointed by the Secretary of State under section 33(1) of the Act, and any deputy Chief Inspector;

"disabled" means not under command for a period of more than 12 hours, or for any lesser period if, as a result, the vessel needs assistance to reach port;

"grounding" means making involuntary contact with the ground, except for touching briefly so that no damage is caused, and "goes aground" shall be construed accordingly;

"hazardous incident" means any incident or event, not being an accident as defined in regulation 2(1), by which the safety of a ship or any person on board is imperilled, or as a result of which serious damage to any ship or structure or damage to the environment might be caused;

"inspector" means an inspector of marine accidents appointed by the Secretary of State and in the context of the investigation of a particular accident includes any person appointed to investigate that accident under regulation 6 below;

(a) 1988 c.12.

"Inspector's Inquiry" means an investigation ordered under regulation 6(2);
"investigation" means any investigation carried out by an inspector, including but not limited to an Inspector's Inquiry;

"major injury" has the same meaning as in the Merchant Shipping (Safety Officials and Reporting of Accidents and Dangerous Occurrences) Regulations 1982(a);

"pleasure craft" means a vessel primarily used for sport or recreation;

"serious casualty" means an accident to a ship causing loss of life, or total loss of a ship of more than 50 metres registered length;

"ship's boat" includes a liferaft, painting punt and any boat normally carried by a ship;

"strands" means goes aground and cannot immediately re-float;

"United Kingdom ship" means a ship registered in the United Kingdom.

(3) Where a ship is managed by a person other than her owner (whether on behalf of the owner or some other person, or on his own behalf), a reference in these Regulations to the owner shall be construed as including a reference to that person.

Application

3.—(1) These Regulations, except regulations 5 and 7, shall apply to hazardous incidents in the same way as they apply to accidents, and the term "accident" shall be construed accordingly.

(2) These Regulations apply to accidents involving or occurring on board—

(a) any United Kingdom ship except that regulation 5 shall not apply to pleasure craft, or to lifeboats operated by the Royal National Lifeboat Institution; and

(b) any other ship within the United Kingdom or the territorial waters thereof, save that regulations 5 and 7 shall not apply to such a ship.

(3) An investigation may be held under regulation 6 into an accident involving or occurring on board a ship which is not a United Kingdom ship and which at the time of the accident was not within the United Kingdom or the territorial waters thereof, if the Secretary of State so determines.

Purpose of Investigation

4. The fundamental purpose of investigating an accident under these Regulations is to determine its circumstances and the causes with the aim of improving the safety of life at sea and the avoidance of accidents in the future. It is not the purpose to apportion liability, nor, except so far as is necessary to achieve the fundamental purpose, to apportion blame.

Duty to Report Accidents

5.—(1) Except as provided in paragraph (2), when an accident occurs the master shall send a report to the Chief Inspector as soon as is practicable by the quickest means available, and in any case not later than 24 hours after the ship next arrives at a port.

(2) Where a ship is lost or presumed lost or is abandoned, then such a report shall be sent by the owner, the master, or a senior surviving officer as soon as is practicable by the quickest means available.

(3) A report made to a Marine Office of the Department of Transport or to HM Coastguard, or a report made under the Merchant Shipping (Safety Officials and Reporting of Accidents and Dangerous Occurrences) Regulations 1982, or the Fishing Vessels (Reporting of Accidents) Regulations 1985(b) shall be regarded as complying with regulation 5(1).

Ordering of Investigation

6.—(1) Any accident to which these Regulations apply may be investigated. Where an accident occurs, the Chief Inspector shall decide whether or not an investigation is required, and where a report has been received under regulation 5 shall cause the master

(a) S.I. 1982/876, amended by S.I. 1984/93.

(b) S.I. 1985/855.

or owner to be notified of his decision. He may before deciding cause to be obtained such further information as he considers necessary. The owner or master of the ship concerned shall upon being so required provide such further information to the best of his ability and knowledge.

(2) The Chief Inspector may order in view of the importance or seriousness of the accident that the investigation takes the form of an Inspector's Inquiry, to be carried out by one or more inspectors of marine accidents appointed under section 33(1) of the Act, or additionally or alternatively by such other person or persons whom he may appoint specifically for the purpose; and such other person or persons shall have the powers conferred on an inspector by section 27 of the Merchant Shipping Act 1979(a).

(3) Public notice that an Inspector's Inquiry has been ordered shall be given in such manner as the Chief Inspector may think fit, and shall invite any persons who so desire to make representations to the inspector in writing within a time to be specified in the notice.

Preservation of Evidence

7. The owner and master shall so far as is possible ensure that all charts, log books and other records and documents which might reasonably be considered pertinent to an accident reportable under regulation 5 shall be kept and no alteration shall be made to entries therein, and any equipment which might reasonably be considered pertinent to such an accident shall so far as is practicable be left undisturbed, until either—

- (a) notification is received from the Chief Inspector that no investigation is to take place; or
- (b) if notification is received that an investigation will take place, the Chief Inspector or the inspector carrying out the investigation indicates that he no longer requires them.

Conduct of Investigations

8.—(1) Subject to his powers under section 27 of the Merchant Shipping Act 1979 an inspector shall conduct an investigation at such times and places and in such manner as appear to him most conducive to achieving the fundamental purpose set out in regulation 4.

(2) An investigation may extend to cover all events and circumstances preceding the accident which in the opinion of the inspector may have been relevant to its cause or outcome, and also to cover the consequences of the accident and the inspector's powers shall apply accordingly.

(3) Every person required to attend before an inspector shall be allowed his reasonable expenses of attending.

(4) Upon completion of an investigation the inspector shall submit to the Chief Inspector his findings as to the facts of the accident and, where the facts cannot be certainly established, his opinion as to the most probable facts. He shall clearly distinguish between established facts and conjecture. He shall also submit his analysis and his conclusions together with such observations and recommendations as he thinks fit to make.

(5) At any time during the course of an investigation the Chief Inspector may determine that the investigation shall be discontinued, and in that event, no submission by the inspector need be made.

Report of Inspector's Inquiry

9.—(1) Subject to paragraph (4) below, where an Inspector's Inquiry has taken place, the Chief Inspector shall make a report to the Secretary of State (in the remainder of this regulation referred to as "the Report") which shall include the inspector's findings and his own observations thereon and any recommendations which he considers appropriate.

(a) 1979 c.39.

Subject to paragraphs (2) and (3) below, the Secretary of State, unless he orders a Formal Investigation under section 56 of the Merchant Shipping Act 1970(a), may publish the Report if he thinks fit and shall do so if—

- (a) it appears to him that to do so will improve the safety of life at sea and help to prevent accidents in the future; or
- (b) it relates to a serious casualty to a United Kingdom ship;

unless in his opinion there is good reason to the contrary.

(2) Where the Report or any investigation indicates that there may have been a breach of the law and that prosecution of the suspected offender should be considered, the Report shall not be published until either prosecution, including any appeal, has been concluded or it has been decided not to prosecute.

(3) Where an Inquiry under section 52 of the Merchant Shipping Act 1970 into the conduct of a Certificated Officer, or action by the Secretary of State under section 53 of that Act in respect of the holder of a certificate other than an officer's, is under consideration then the Report shall not be published until proceedings under either of the said sections have been completed or it has been decided not to pursue such proceedings.

(4) Except when a Formal Investigation has been ordered, or where paragraphs (2) or (3) above apply, if in the opinion of the Chief Inspector the reputation of any person is likely to be adversely affected by the Report then it shall not be submitted to the Secretary of State until—

- (a) that person (or if that person be deceased, then such person as appears to the Chief Inspector best to represent that person's interest) is served with a copy of the Report or that part of it which affects him; and
- (b) that person or his representative has been given a period of 28 days to make representations to the Chief Inspector either in person or in writing; and
- (c) the Chief Inspector has considered any such representations and has notified the person concerned or his representative of his conclusions on them, and of what changes, if any, he intends to make to the Report; and
- (d) the person or his representative has been given a further period of 28 days in which he may submit to the Chief Inspector an alternative text for any passages in the Report which remain in issue.

(5) The Chief Inspector shall on submitting the Report to the Secretary of State in addition shall refer to any service of the Report under paragraph (4) of this regulation and shall set out the substance of any representations made in response, together with his conclusions and a record of any action he has taken. He shall also quote in full any alternative texts submitted under paragraph (4)(d) above; and if the Secretary of State decides to publish the Report he shall publish any such texts with it as an Appendix, unless in his opinion there is good reason not to do so.

(6) The Chief Inspector shall forward any recommendations contained in the Report to those persons or bodies who in his opinion are most fitted to implement them.

(7) Notwithstanding the preceding paragraphs of this regulation, the Chief Inspector may at any time during the course of an investigation release information and recommendations if in his opinion it is necessary or desirable to do so in the interests of safety.

Summaries of Investigations

10.—(1) The Chief Inspector shall prepare and publish from time to time collective summaries of investigations.

(2) A summary report of any investigation may be published, and if not published shall be otherwise made available to any person requesting it who satisfies the Chief Inspector of his legitimate interest.

(a) 1970 c.36; section 56 was amended by the Merchant Shipping Act 1988, Schedules 5 and 6.

Reopening of Investigation

11. The Chief Inspector may cause any investigation to be reopened either generally or as to any part thereof, and shall do so—

- (a) if after the completion of the investigation in his opinion new and important evidence has been discovered, or
- (b) if for any other reason there is in his opinion ground for suspecting that a miscarriage of justice has occurred.

(2) Any investigation reopened shall be subject to and conducted in accordance with the provisions of these Regulations relating to such an investigation.*

Extension of Time

12. The Chief Inspector, in respect of the periods of 28 days prescribed in regulation 9(4)(b) and (d) shall have the power to extend the said periods, and shall not unreasonably refuse to do so, and this power may be exercised notwithstanding that the prescribed period has expired.

Penalties

13.—(1) If a master, owner or officer fails without reasonable cause to report an accident as required by regulation 5, or if a master or owner so fails to provide information as required by regulation 6, he shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 3 on the standard scale.

(2) If any person fails without reasonable cause to comply with regulation 7 above he shall be guilty of an offence and liable on summary conviction to a fine not exceeding the statutory maximum and on conviction on indictment to a fine.

6th July 1989

Paul Channon
Secretary of State for Transport

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations give effect to section 33 of the Merchant Shipping Act 1988, which relates to the investigation of marine accidents. They define the accidents to which they apply; set out the purpose of investigation; lay down requirements for accidents to be reported; and make provisions for the ordering and conduct of investigations.

The more serious accidents (as defined) must be reported to the Chief Inspector of Marine Accidents, either directly or through a Department of Transport Marine Office or HM Coastguard. (A Merchant Shipping Notice will be issued giving further information on reporting). Any accident may be investigated if it involves a ship registered in the United Kingdom or any other ship in UK waters, and provision is made for the investigation of accidents to non-United Kingdom ships, outside UK waters, at the discretion of the Secretary of State. The Regulations apply to fishing vessels as well as to other ships; they also apply to pleasure craft except that such craft are excluded from the reporting requirements, as are lifeboats operated by the Royal National Lifeboat Institution.

Hazardous incidents, defined broadly as incidents having the potential to lead to accidents, may also be investigated.

On learning of an accident or hazardous incident, the Chief Inspector may call for such information as he considers necessary from the owner or master of the ship concerned, who must provide it to the best of his ability, before he decides whether an investigation by an inspector is required. If such an investigation is to be carried out, it shall be conducted as the inspector considers will best assist its aims, subject to his statutory powers which are laid down in section 27 of the Merchant Shipping Act 1979. The inspector's findings, analysis and conclusions are to be submitted to the Chief Inspector, with any recommendations he thinks appropriate.

In serious or important accidents, the Chief Inspector may order an Inspector's Inquiry, at the conclusion of which he is to submit a report to the Secretary of State, which must include the inspector's findings and his own observations. This report may, and in certain cases must, be published but safeguards are provided to prevent publication before any further legal proceedings under the Merchant Shipping Acts (which might be prejudiced by premature release of the report) are taken, or in other cases before a person who is adversely criticized in the report has the opportunity to rebut such criticism.

Provision is also made for the production of summary reports of all investigations.

Penalties are laid down for unreasonable failure to report an accident, to provide information, or to keep relevant documents and equipment for an inspector's scrutiny. Penalties for obstructing an inspector or otherwise impeding his investigation are laid down in section 28 of the Merchant Shipping Act 1979.